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THE BOSTON
Medical and Surgical
JOURNAL.

GYNECOLOGY OBSTETRICS MENOPAUSE

PART I.

The General Practitioner his own Gynecologist.


PART II.

Common Sense in Obstetrics.

PART III.

The Change of Life in Woman.

*BEING A REVISED AND ENLARGED REISSUE OF THREE SERIAL
ARTICLES APPEARING IN "THE MEDICAL COUNCIL."*

BY 

A. H. P. LEUF, M. D.

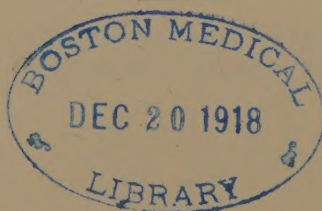
Author of "Practical First Principles" and
Associate Editor of "The Medical Council."

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By J. J. TAYLOR, M. D.



PREFACE.

A word of explanation is due the reader as to the origin of this book. It consists of a re-issue of three series of papers, and some editorials and paragraphs, that appeared in *The Medical Council* from its inception, extending over a period of several years, together with such modifications and additions as were necessary to bring it up to the times. Many of the newer remedies are not mentioned because of their undetermined merit, for the only laudation that nearly all of them have is of questionable value because secured and put out by interested manufacturers. Besides, many are duplicates under the changed, fanciful names given them by rival drug firms.

My object has been to talk more especially of those matters with which I was, at least, reasonably familiar, and this volume is, therefore, just as deficient in completeness of subjects as my experience has been.

I preferred to write only upon the matters of which I had actual knowledge. My aim has been to handle the subject in a way that would encourage the general practitioner in enlarging his field of work, in the use of common sense, and urging efficiency in the use of a few implements rather than a defective knowledge of the use of many, for, besides being a professional man, the doctor is also, pre-eminently, a workman who should understand his business, be familiar with his tools, and have the courage to use them.

In the Gynecologic division it has been my aim to encourage the practitioner to do much of the work that he now sends to the specialist. That this object has been attained to some extent has been evidenced by the numerous gratifying letters to that effect that were received as the publication of the series progressed. It is, also, only fair to add that this book owes its being to the numerous requests that came to the publisher of *The Medical Council*, as well as to myself, that these serials be published in this form.

The Obstetric series was undertaken mainly to encourage a greater use of common sense in this department of medicine, where it is most lacking at the same time that it is most needed.

The numerous and repeated requests, for the treatment of different subjects not at first intended to be touched upon during the publication of this series, caused a discussion of many that it had not been my intention, originally, to take up, thus extending the series far beyond its original scope, but almost always within the lines of my own practical knowledge.

The practice of obstetrics is replete with superstitions of the past, not alone transmitted by the ignorant, but by the profession itself. It seems to me high time to throw off this ancient yoke of superstition, and that we think for ourselves in all things, relinquishing those that have no rational excuse for existence. In no other department of medicine is it so important to assert ourselves as full masters of ceremonies, for in no other is danger so often imminent and help so readily thwarted by ignorant opposition or trivial interference, neither of which should be brooked for a single instant. Nor has any man the right to undertake the care of a woman in labor without a thorough mental equipment. A favorable result often hangs by a mere thread that the least adverse influence will break at the cost of one or more lives that could readily have been saved by proper care and foresight.

Concerning the third part of this work, it may be well to say that it yields nothing to the other two in importance. At a period of life when woman has completed her special work, and is destined, by nature, to enter upon a period of merited repose and enjoyment, it is an indictment against the profession, as well as against the intelligent masses, that she should, as a rule, be compelled to suffer the various discomforts between wide extremes over a period of from a few months to a number of years. It is a period of stress comparable with that of puberty, the beginning of the child-bearing period, the budding of womanhood. It is one of greater stress because it occurs at a time of life after woman has passed through many trials and vicissitudes in the bearing of children, their rearing, and the other strains incident to this most active period, to all of which may be added the beginning of the degenerative era of life. Thus handicapped, women are less able to bear the strain of this change than the earlier one of puberty. They are, further,

the victims of the foolish belief that they must submit to all these inconveniences and dangers because of their naturalness ; an idea, I regret very much to say, that is not only fostered by general ignorance, but by that of the profession as well. Poor woman, at this time, suffers untold misery, mental and physical, in blind submission to remediable ills because of this fatuous belief.

Much of this is to the shame of most physicians, who generally encourage the superstitious notion. There is, perhaps, some excuse for them from the fact that the literature upon this subject is exceedingly meager, and good literature almost *nil*. Tilt's book, at one time the standard authority upon this subject, is now so antiquated that it has very little practical value, while some of the more recent publications, few though they be, do very little to solve this problem, or help or encourage the doctor to do so.

A treatise upon any subject should be more than a mere dictionary of terms and methods : it should teach principles and their application ; should indicate lines of thought ; should stimulate investigation. I have always held that a book should contain that which is characteristic of its author. Most of our books are dictionaric or encyclopedic ; many are faintly altered duplicates of those which preceded them. Most of them do contain some per cent. of good original matter. But a small book containing a message from its author to the profession is worth much more than the pretentious volume in which it is lost if the attempt is made to build up around it a comprehensive treatise. A book is a pretentious thing, and all the more ridiculous if it does not have evident reason for its existence. It should be new in being up to date, or present new ideas, or new explanation of old ones ; should stimulate thought and research ; should encourage endeavor to do better work.

That the following pages fulfill all these requirements would be a useless claim, for they do not ; but they aim to do this in part, and to that extent may be hoped to have some good reason for existence.

A. H. P. LEUF.

2353 N. Seventeenth St , Philadelphia.

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PART I.

The General Practitioner
His Own Gynecologist.

FOREWORD.

It is just as well for the doctor to bear in mind that he entered upon the study of medicine, not so much as a philanthropist as to become a member of a justly respected profession, that he could secure, at least, a comfortable living and enjoy desirable social standing. A doctor practices his profession to do good, but he must not forget that he is entitled to a share of the good. The physician who neglects the business side of practice certainly fails to do his duty by those who may be dependent upon him. The volume and value of a man's practice depends upon his versatility, as well as upon his efficiency. The more things a man can turn his hand to, the sooner he will have his time occupied with work, after which he can begin to limit his efforts to narrower fields, and exact higher charges in proportion to his increased experience and efficiency. Every man has equally as good an opportunity to learn to treat gynecologic cases as he has those of typhoid fever, pneumonia, dyspepsia, or any of the other commoner ills, and there is, therefore, no valid reason why he should not practice this part of his profession as well as the others. The fact that this is a remunerative field of practice is only a greater reason why it should be embraced. Everything is either in sight or reach, so that diagnosis and treatment are simpler than in many other departments of medicine. Gynecology is, therefore, easy of practice; more so than many of the other branches of medicine that no man, entering upon general practice, ever thinks of relinquishing to a specialist. The general practitioner cannot be too strenuously urged to practice this branch. If he has any doubts about his ability, he can easily qualify as is suggested in the following pages, and he can thereby augment his income at the same time that he increases his local standing, both in his profession and among his patients.

Aside from the financial consideration or other selfish motive, there remains the great humane incentive that he is able, by taking up this branch, to alleviate an inestimable amount of suffering among women in the course of an ordinary practice. And not only this, but he can, by timely interference, prevent the development of grave conditions that result either in premature death or chronic invalidism. It is, therefore, as much the duty of the general practitioner to do nearly all his own gynecologic work as it is to do any of the others which to him are so self-evident.

INTRODUCTION.

I desire to thank the many readers of this series for their considerate attention, and more particularly those who have done me the kindness to send encouraging letters of approbation, some even of thanks, because these plain articles have induced them, to their "great satisfaction and profit," to undertake, at least, a share of such of their gynecologic work as they formerly had sent to specialists. To do this very thing was my main object, and I am correspondingly gratified at its success. No one, however, is more aware of the shortcomings of these hastily outlined sketches than I am myself. While some things I have stated may claim to be new, nearly all is old, or, at least, well established. Some of the more valuable suggestions are so old that, despite their worth, they have been forgotten. This is true of the use of *cimicifuga* and *pulsatilla*, and I am almost justified in adding *hydrastin*.

GENERAL PRACTICE VS. SPECIALISM.

It has, upon more than one occasion, been quite truly stated, with the object, however, of simply being witty, that the general practitioner is only a sorter of patients for distribution among the specialists. The general practitioner is finding his field narrowing year by year until he wonders why a four years' course of head-breaking study is any longer required for the simple duties still allotted him. But much of this limitation is due to his own inertia. He is frequently overawed by the great number of cases reported by specialists, and the many expensive instruments said to be necessary to do some of the simplest operations. The magnitude of those procedures is by many enormously enlarged, with the double effect of adding to the conceit of the specialist, and imposing upon the general practitioner. The latter could not be done if every man did

his full duty in the study of anatomy while at college. So simple an operation as a perineorrhaphy is an impossible task to thousands of practitioners, either because they have not the moral courage to make a simple beginning, or because they have never made an earnest effort to understand this simple, but, nevertheless, important little piece of patchwork.

DO YOUR OWN WORK.

It seems to me that no message to the profession could be more far-reaching in the production of happy results than the injunction to its members to do as much of their own work as they possibly can. Thousands upon thousands of our women are invalids to-day because denied the simple little attentions that it is within the grasp of every physician to give. An enormous number of perineal lacerations, for instance, go unrepaired because of the diffidence of the attendant, who is afraid to do the work, and, also, because he is either afraid to admit this fact by calling in a specialist, or because the patient cannot afford to pay one. Many justify their conduct by pretending to believe perineal restoration a useless procedure.

The development of the polyclinic schools throughout the country within recent years is a good augury of the future; at least, we may hope so. A locality that supports, say, five physicians will pay most of its money, and do it very willingly, to that one of them who gives the promptest and most permanent relief. It does not require a very long time for women to learn which of the five is the most certain to relieve backache, "weakness," "whites," and the many other of their curable ills.

To call in a specialist is to admit your own incompetence, and his superiority, while you lose your influence with the patient. Besides this, the larger fee of the specialist deprives your patient by just that much of ability to pay you, for he works for spot cash. Again, you lose to him a fee that you could and should—mark you, should—have earned yourself.

HUMBUGS.

The humbugs in the profession are not only those who advertise, for most of them are in good standing. The hypocrites

and the conscienceless are largely upon a respectable footing. Some of the greatest pieces of unscrupulous rascality I have ever seen were practiced by some "high lights." All this is apropos of the crushing reports of numerous operations with expensive paraphernalia that yield unheard of percentages of recoveries. I have seen a great many of these "recoveries," as have, no doubt, so many others, that wished themselves well back into their unrecovered pre-operative state as being more preferable. These glaring "successful" reports, these misrepresentations, discourage the honest practitioner whose sole thought is the best interest of his patient rather than the readiest way to fill his own pocketbook. To the general practitioner I would say, do not believe all you read, but beware of the sly quack who creeps upon you by stealth, and abuses your confidence. Do your own work without fear if you know how, and learn how to do it if you do not already know. You can afford to do the same work for less money than the specialist gets. This enables your patients to get quicker relief, for most of them are poor.

FEW INSTRUMENTS NEEDED.

Do not be discouraged by the great multiplicity of instruments for every operation. They are not needed. A few will suffice. The best work is usually done with the fewest and simplest tools. The essential requisites to success are the recognition of the trouble, a knowledge of the remedy, and the courage to carry it out. Why, then, not do your own work and save your patient time, suffering, and money, while you add to your own reputation, prestige, and income, besides increasing your own self-respect?

For convenience, I have considered it best to divide this subject into the consideration of the few instruments required for general gynecologic work, together with a few remarks concerning their use, and a consideration of the commoner ailments and operative procedures likely to be encountered by the general practitioner, together with suggestions as to diagnosis and treatment.

IN EXPLANATION.

In the following pages, it is my aim to consider only those affections peculiar to women that are commonly encountered by the general practitioner. Nor shall I give an explicit account of their entire symptomatology, my object being, merely, to give these signs or symptoms by which they may be identified, together with such suggestions for treatment as may be serviceable to the general practitioner, and upon which he is hoped to improve by the exercise of the most recent information and the common sense at his disposal. It must not be forgotten that however recent the treatment of a subject may be, it may soon become antiquated by some signal advance. Thus have the best surgeries and gynecologies of twenty years ago become useless, because of the development and general acceptance of the germ theory and its logical cogener, antiseptics. The same may be said about treatises on general medicine of a score of years ago.



Chapter I.

SIMPLE AND INEXPENSIVE OUTFIT OF INSTRUMENTS REQUIRED.

The following instruments constitute a fair working armamentarium for the general practitioner as gynecologist. Proficiency in the use of these few implements is more desirable than a mere acquaintance with the use of a much larger number.

SPECULA.

One speculum is, as a rule, sufficient, but a Sims' is, at times, so useful, especially when assistance is at hand, that it, too, should be added to the list of implements. The ordinary bivalve or trivalve is the best for general use. I use Taylor's, and prefer it to other make because of its simplicity. A trivalve may be preferred by some, but I never use one. The small end of the Sims speculum is very useful in primary examinations in young women who have never had coitus. They are usually accompanied by some one, and to such may be relegated the duty of holding the instrument. The speculum should be warmed and lubricated before introduction. The labia should be separated with the fingers in advance of the instrument, which, in a small introitus, may be introduced sideways, and rotated after it has entered the vagina. It should be pressed a little backward against the perineum, and advanced at right angles to the opening for a short distance, say an inch or an inch and a half, after which the end is to be depressed toward the lower end of the sacrum. Care should be taken not to pinch the mucous membrane of the vulva in the introduction of the bivalve or trivalve instrument, an unpleasant occurrence due to the incomplete closure of the blades, which permit a fold of tissue to slip between them, and then gets pinched as soon as they are forced together by the surrounding structures. Pudendal hairs are caught in the same way. Like trouble is apt to follow the careless withdrawal of the instrument, especially in a tight introitus. It is, also, advisable to maintain a slight separation of the blades of the compound speculum (one with more than one blade) until the cervix has been permitted to escape from them, otherwise it may also get pinched, and cause the patient unnecessary pain, especially if the cervix is tender.

A warm, well-lubricated, speculum may be introduced into a very tender and tight vagina without much discomfort, if very gradually advanced. But there are many exceptional instances in which it cannot be done at all, except an anesthetic or local anodyne is used.

PROBE.

The uterine probe is a useful little instrument, and none is better than the delicate, flexible, silver one, which can repeatedly be bent in any direction with perfect ease, and so find its way through an irregular cervical canal to the uterine cavity. It is the great differentiation implement of the gynecologist. It always indicates the direction and degree of flexion of the cavity of the uterus regardless of its external contour. By its means may readily be learned the extent of an intra-uterine growth, and the amount of its attachment. An interstitial fibroid of the posterior uterine wall might readily be diagnosed as a retroflexion, because of posterior bulging, but the probe dispels this illusion by entering the uterus to the fundus, bent concavely forwards.

DEPRESSOR.

Nott's double vaginal depressor is a useful instrument. With its larger or smaller end, as occasion requires, the bulging vaginal walls between the speculum blades are pushed aside, and a good view obtained of the side of the cervix; or the cervix may be displaced with it to afford a better view of the cervicovaginal junction and the vaginal wall descending therefrom. It is an additional, elongated, finger.

APPLICATOR.

The aluminum applicator is very useful for making applications within and without the uterine cavity. It is flattened or roughened at its free end so that cotton may be tightly wrapped around it without danger of coming off. This is then dipped in the solution, or smeared with the substance, to be applied. This completed, the cotton is readily pushed, or pulled, off.

REPOSITOR.

The best repositor, in my judgment, is that of Elliott. It adapts itself readily to marked curves of the uterine canal. It has a flexible spiral end, fully three inches in length, bending readily forward and backward, but having no lateral movement. It is bent either way by a milled thumb screw at the external end. The flexible end may be inserted only a little

bent, after which the curve is increased by turns of the screw. When it is fully introduced, the screw is reversed, and the uterus placed in an opposite position, and held there for a time. The only objection to the instrument is that it is not as readily cleaned as the others, but this is small compared with its many advantages. It is best laid in a hot place, as in an oven or upon a register or radiator, after washing and drying, so that its interstices and interior may not remain wet and then corrode.

DILATOR.

There is no dilator, in my judgment, so generally useful as the one named after Palmer. It is, at least, as capable of as many uses as any of the others, and is less costly than most of them. Some of the others are either too large or too small, and thus limited in their use. It obviates the necessity of having two dilators. A smaller, pointed, dilator is sometimes needed, and for this purpose I should recommend that of Nott. The only large dilator that I would commend is Goodel's, with blades that separate parallel.

FORCEPS.

The forceps to be used are the dressing, vulsellum, polypus, hemostatic, and tissue. The polypus forceps generally answers the purpose of a dressing forceps in my hands, though the latter is, at times, preferable. I, therefore, suggest having both Boze-man's, I believe to be the most desirable dressing forceps. With it, cotton and other matter is readily carried into the uterine cavity when an applicator cannot be used, and when a polypus forceps is too wide. The one objection to it, however, is its limited utility, for it is so slender that the blade tips twist upon themselves when there is any rotary strain.

Of the many polypus forceps, I prefer Wilson's, being intermediate in size, and more generally serviceable. In consequence of the fenestration of its ends, each shaft can be utilized as a depressor, while, at times, its serrated inner side affords a holding surface that is very desirable. Its corrugated inner surface also makes it very useful as a dull curette in post abortion cases, not only bringing away shredded detritus, but exciting the uterus to contraction and the expulsion of its undesirable contents.

Among the many vulsellum forceps, the long straight one is the most universal and, therefore, the most economic. It is hardly necessary to have more than one pair of these, because the uterus can be drawn down with it, while any tenaculum is sufficient to make counter traction on the other lip. Of course,

two vulsella are preferable, but, as I say, one can generally be made to do.

It is necessary to have several hemostats, say three. I do not believe in using a large number, because they are in the way, and they drag on the tissues, especially if there are many, and this is more objectionable than is generally supposed. It is simpler, and I maintain wiser, to tie bleeding vessels with gut as they are encountered, unless there are but one or two, than it is to have dangling from them a large number of forceps; or the bloodvessels may be twisted, if small. The ordinary Pean is the most desirable.

Tissus forceps are very useful in picking up thin or closely adherent surfaces for purposes of denudation. The little sharp teeth take hold more readily, and hold on better, than do the ordinary forceps. The tenaculum is often used for this purpose, but the lifted tissue is then not as easily controlled, and sometimes is torn through. One is enough, and this should be a plain straight one.

CURETTE.

This instrument is very useful, its proper and fearless use saving much suffering and anxiety. Its use, in conjunction with a good disinfectant, is the most potent cleansing process to which the intra-uterine cavity can be subjected, and it is practically harmless when properly and judiciously employed. The style of curette required depends upon the work in hand, upon the nature of the material to be removed.

Thomas', Sims' sharp and Skeene's will do for all practical purposes. Skeene's is the largest, and it is often not available where either one of the others will do, for the reason that a cervical canal too small to admit it may allow the others to pass. The smaller ones, notably with a blunt edge, such as the wire loop curette, will not do when firm tissue is to be removed, or even spongy tissue that is very adherent. Each has its special use that is readily determined in each case, the operator trying different ones in succession, if necessary, till the right one is found.

SCISSORS.

•While it is very desirable to have a number of variously curved scissors, it is by no means necessary. Any one with only fair dexterity can get along with a straight, and a flat curved, pair. Their uses are varied, but self-evident, and require no further elucidation, except the reminder that it often pays better to cut with scissors than with a knife. A scissors cut bleeds less, is sometimes more safely made, and they can be used out of sight more readily than can a knife.

NEEDLE HOLDER.

The selection of this instrument is important. I prefer one similar to the Russian holder. It is easily controlled, and affords an excellent hand grasp. The main requirements are that the instrument should be detachable, be easily controlled, have a tight grip, afford a good hand grasp, and be sufficiently long.

NEEDLES.

The needles to be used are for perineal, cervical, and abdominal operations. Some of them will serve for any other kind of work likely to be required.

The perineal needle of Papine is the most serviceable in my hands. It is easily controlled, thus permitting expeditious work without hurry, but is best used in relatively superficial lacerations, for it causes too great a strain upon the tissues in deep ones. For the deeper tears, the ordinary curved perineal needle is the best. The cervix needles should be carefully selected, and, I believe, with some regard to the predilections of the man who is to use them. But I believe it judicious to avoid round-point needles, because of the greater force required to push them through the dense tissue of the neck. For the same reason, I do not like a full curved needle, and prefer them straight or semi-curved. The greater the curve, the more strain upon the needle where it is gripped by the holder, and the greater difficulty in locating its emerging point. There is least strain, therefore, upon the straight needle, and it is the most readily controlled. But the half curve has the advantage of enabling the needle to more readily traverse a circuitous route, and thus insure the coaptation of the intermediate wound surfaces. To me, the Sims needle seems undoubtedly the best. Vance's abdominal needle, however, is, to my mind, the preferable one for abdominal work, and the half curve one will generally do all that can be required. It is not indispensable, but so handy that it is worth having.

SUTURE.

Since the introduction of gut suture, there cannot be any doubt of the inferiority of the metallic suture. Silkworm gut is, in my estimation, the most serviceable. It is strong, flexible, durable, smooth, unirritating, and causes minimum distress during its withdrawal; all points of importance. The suture is best held in position by means of perforated shot.

THE OPERATING PAD

Is well worth its purchase money. It is very useful in office work, in operations, and in childbirth. The progressive, alert, practitioner loses time, money, and temper by being minus one. They bring patients to the men who have them.

A FOUNTAIN SYRINGE.

This is indispensable to efficient and comfortable work. With it, douching and washing become a restful procedure. It is best to get one of three or four quarts capacity, as the added size causes but an insignificant increase in price.

A BED PAN.

One of the indispensables to gynecologic work is a good bed pan. The one I prefer to use is made of porcelain, and has an opening in the side that is stoppered with a rubber plug when used as a bed pan, and to which a tube is attached when used for douching. There are other kinds, but this is as serviceable as any. An advantage of the enamelled pan is its lesser weight and its unbreakableness, but imperfections in the enamel are easily overlooked, thus affording an undiscoverable nidus for disease germs that preclude good antiseptic or aseptic surgery.

PESSARIES.

No gynecologic armamentarium would be complete without an assortment of pessaries. These are so various that it is impossible to recommend a few with any satisfaction. Much has been said against them, but that they are serviceable, and a comfort to many women, is undeniable. Their efficiency depends upon many circumstances. In proper hands, they accomplish much good. The simple pessaries are made of hard rubber, of a spiral spring with a soft rubber covering, and of inflated thin rubber sheeting. All are useful, and all have been condemned. Every practitioner should have a set of soft rubber ring pessaries, and there should be some hard rubber ones for antero and postero version and flexion. They should fit the vagina. The soft ones do this fairly well without extraneous aid, but the hard rubber ones often require fitting. This is accomplished by heating over a spirit flame (which softens them), and then bending to the requisite shape. If this is not done exactly right the first time, the patient's vagina or cervix is tender at the misfit part, which must be discovered and corrected. The ordinary inflated rubber toy ball makes a good

pessary in certain relaxed conditions of the vagina, serving, sometimes, with admirable efficiency, to hold up a fallen uterus.

It may not be out of place, right here, to say that the selection of a suitable pessary, and its proper fitting and placing in position, require more skill than the performance of a simple perineorrhaphy, and yet hundreds insert pessaries with the greatest composure who would tremble at the prospect of having to stitch together the torn faces of a perineal rent. The one is ignorance and the other moral cowardice, and the two are co-related. They mark many a member of the profession to-day as able to shine in its cause as any who have done so in the past. These men simply fear to begin. It is to their own interest, to that of their patients, and even to the profession at large, that they rouse themselves and make the primary effort that will release them.

IN GENERAL.

All implements should have detachable joints, so as to admit of ready cleansing, and, for the same reason, a smooth metal handle is preferable to a wooden one. It should not be forgotten that a bichloride of mercury solution attacks metallic instruments, its effect being specially noticeable in its dulling of sharp edges and points. They should, therefore, not be kept very long in a solution of this kind, and, when such antiseptics are employed, the operator must not neglect to have his instruments put in good condition at intervals. It pays to take good care of instruments, and to be sure that they are right before an operation is begun.

I have purposely refrained from recommending an ether inhaler, because they cost money, and are no better, for all practical purposes, than the old-fashioned paper and towel cone.

These are about all the instruments needed for the great bulk of one's practice. They are not complicated, and should not be very expensive. The cost of the entire outfit will probably fall within \$50. Some, no doubt, are already owned by nearly everyone who reads these pages.

Chapter II.

THE DIAGNOSIS OF FEMALE DISEASE.

The first requisite to diagnosis is a correct knowledge of the parts and their relative positions. This is indispensable, and may be gleaned from anatomic plates and descriptions, together with bimanual examination of the pelvic contents. If necessary, the mind should be additionally refreshed by dissection, or by careful observation at any post-mortem examination that may conveniently present itself.

Daily examination, preferably of a thin woman with a small pelvis, for one week, will add very much to a practitioner's understanding of the parts. I have known many who soon made rapid progress by thus simply bringing into play their own mother wit. I suggest a small pelvis, especially for short-fingered physicians, because the bony walls are thus more readily felt. In a thin woman, the uterus is easily caught between the finger in the vagina and the tips of the fingers pressing down from the abdomen.

As a rule, the uterus is tilted slightly forward, so that the examining finger, with its back against the posterior vaginal wall, encounters the os uteri with the anterior portion of its tip. But the position of the uterus varies normally with the state of the bladder and rectum. It is very movable, and is held in position as much by the juxtaposition of other parts as by its "ligamentous" connections.

The examiner must bear in mind the location of the ischial spines, the sacro-sciatic ligaments and foramina, the sacral promontory, the ischial tuberosities, the symphysis pubis, and the sub-pubic arch. He must learn to balance the uterus upon the end of his finger, and gauge its weight, besides judging of the consistency and the size of the cervix. The aim should not be a multiplicity of diagnostic methods so much as a thorough understanding of a few that can be depended upon. A well-educated sense of touch (the *tactus eruditus*) is more reliable than the ocular inspection of the man who does not know.

To many it will seem remarkable that Lawson Tait entirely dispensed with the speculum, so expert did he become in the sense of touch, and yet this is but another illustration of the well known adage that "practice makes perfect." We see

it demonstrated in the remarkable development of the tactile sense in the blind, simply because it is more used in them than in those who can see.

The first aim of the practitioner who would do his own gynecologic work should be to master the evidences of normal pelvic contents and external genitals. If this is not done, success is impossible, and, I may safely add that, a thorough knowledge of the normal state forms fully one-half of the essentials to high diagnostic ability. With this information, the practitioner never hesitates on the all-important primary question, "Is there anything wrong?" If there is, additional knowledge is required to accurately designate the trouble.

EXAMINATION.

All examinations should be made, if possible, upon a table 28 to 30 inches high. It should be firm, and stand upon four legs having a good roller under each. A shawl or woolen robe may be folded upon this, and a firm pillow placed at one end as a head rest. It is best if stuffed with hair or excelsior, and covered with leather or some other smooth surface. Stirrups may be added at one end, if preferred, but they are not indispensable. A drawer at the foot of the table is convenient if the instrument case is not close at hand.

CHAIR OR TABLE, WHICH?

Gynecologic chairs are an expensive nuisance. I have owned two, and would not have another. The table I use cost me \$4, second-hand, and I prefer it to any chair in the market. The man who buys an expensive chair with which to impress his patient is deluded, unless he has no ability to impress her with his skill by giving relief. Remember, the price of this unnecessary ornamental piece of furniture will buy all the instruments one needs, with money to spare.

THE VULVA.

The vulva of the healthy, well-nourished, patient should have the labia majora in contact. Upon separating them, the underlying mucous surface should have a uniform pink appearance. The vaginal orifice should be closed, or nearly so. The meatus urinarius should be at the upper margin of the vaginal opening in the centre of the small puckered elevation. It is often flaccid or swollen, and darker than the surrounding mucosa, either because of active hyperemia or venous engorgement. The labia minora should be separated, and the clitoris observed at their union. If any smegma is present, it should be removed, as it is frequently a source of serious irritation and

reflex troubles Or the clitoris may be adherent to its prepuce, thus lessening or preventing both sexual desire and gratification, a most important matter in the married, and hardly less so in the unmarried, whose attractiveness to, and desire for, man are largely sexual, however masked this may be. If adhesions are found, it is very advisable to break them up as soon as the patient's consent can be obtained.

An open vaginal orifice indicates a perineal laceration, or laxity of the parts due to poor health, emaciation, masturbation, or coitus with a man having a very large penis, or it may be caused by the descended uterus, or a growth in the lower part of the vagina.

THE VAGINA.

The examining finger detects anomalies of the vagina, whether it be flaccid, contracted, tender, or beset with a foreign body or neoplasm. The vaginal examination should be made with much care, never as a mere routine. The posterior vaginal wall often presents a long, rounded bulging, due to feces in the rectum, and if they are very hard, it will feel like a stout hempen cord, or a Frankfurter sausage. Such a patient should be advised to empty her rectum as soon as convenient, taking, if necessary, an enema or a glycerine suppository. If the rectum is empty, the posterior vaginal wall is concave in all directions. It leaves the rectum at its upper end, and passes over to the back of the cervix uteri. That portion of it which intervenes between them forms the floor of the pouch of Douglass. Through this thin partition, of mucous membrane, muscle, and peritoneum, may be felt a fallen ovary, hyperplastic tissue of pelvic cellulitis, effused blood, a retroverted or retroflexed uterus, a posterior uterine fibroid, or hardened fecal matter in a prolapsed loop of the sigmoid flexure of the colon. Ordinarily, it has a soft, boggy, feel.

The cervix itself is felt, and its size, form, and consistency noted, together with the size and form of its os, and the nature of its secretion. A patulous opening exuding stringy mucous indicates endometritis.

The anterior vaginal wall is generally convex, and shorter than the posterior wall. From the cervix, it passes directly upon the base of the bladder, with which it becomes closely connected, while further forward, under the pubic arch, is found the urethra imbedded in its wall. The urethra is felt as a small, round cord that is easily rolled between the finger and the superjacent pubic arch. Any hardness beyond the upper anterior vaginal wall (in front of the cervix) indicates the anteversion or ante flexion of the uterus, or a uterine fibroid; also

a vesical calculus or hyperplastic tissue. Tenderness along this wall may also indicate bladder trouble.

The ovaries are usually beyond reach, and are readily identified, when within reach, by their mobility and their peculiar tenderness, similar to that of the testicle.

The finger should search every part of the pelvis, not only to detect deviations in form and changes in secretion, but also to note increased sensitiveness.

Bimanual manipulation is essential to diagnosis. The upper hand must crowd down the pelvic organs within reach of the intra-vaginal finger. In this way the entire uterus can be manipulated, the ovaries brought within reach, and the bladder examined.

Abdominal palpation has its self-evident advantages in connection with what has been learned from vaginal examination.

Rectal examination is very useful, and yet never practiced by many men who do considerable gynecologic work. In this way a better examination of Douglass' pouch is possible than per vaginam, especially if the uterus is depressed from the abdomen, or drawn down by tenaculum forceps clutching the cervix.

VAGINAL EXAMINATION OF VIRGINS.

All respectable women consulting physicians are divisible, for the purpose under consideration, into those who are or have been married and those who have not; or, to be exact, into those who have, and those who have never, experienced coitus. Needless examinations of even those who are experienced in sexual matters is to be deprecated. The less attention is called to the sexual apparatus without good cause, the better for the patient. It may, therefore, be laid down as a safe rule that, no examination of the sexual apparatus of any woman should be made without good reason.

But a more stringent proviso applies when the patient is a virgin.

First of all, the practice with these girls, for such they usually are, should be to glean a knowledge of sexual matters from older persons, usually the mother.

Not even a vaginal injection should, at first, be given. They should, of course, first be given the benefit of suitable systemic treatment, in the hope that the local symptoms will then disappear. For example, they may be toned up by the use of such tonics, alteratives, or other remedies as may be indicated, with a view to developing their general health to the highest pitch. For the special local symptoms, we have many

special systemic remedies, which should, by all means, be tried. For example, in ovarian pains, we have *pulsatilla*; for uterine affections, *cimicifuga* if they are active, and *hydrastis* if passive, while free action of the bowels will remove many a series of important symptoms of intra-pelvic disease. Her intra-pelvic and abdominal organs are best, most readily, and most agreeably massaged by moderate bicycle riding. By this I do not mean a given number of miles at a stated gait over a definite kind of road, but a ride that gives pleasure, makes her feel better, and does not tire her—a ride upon the completion of which she feels better able to continue than at the outset.

When, however, the nature of the disturbance is such that an examination is in the patient's best interests, everything considered, the examination should be made in the presence of a third person, preferably the mother.

When operations are to be done, the patient should, first of all, be anesthetized before being exposed, and she should not be permitted to see the assisting physicians. The natural delicacy and sensitiveness of our girls should not be shocked by a careless disregard of their finer feeling. Many of these suggestions apply to all kinds of women to a large extent. Even the professional woman of the street often has her delicacy about exposure, and is grateful for any finer consideration that may be shown her. There are few, even of them, who do not appreciate the compliment of respectful deference.

I may also add that, a very good idea of the pelvic contents can be gleaned by the finger in the rectum, and this should often be tried in a virgin before the vagina is entered, for it may obviate any necessity therefore. This is my practice, and I have repeatedly had occasion to congratulate myself upon learning all that was necessary by the rectal route.

HISTORIES.

The attempt to practice medicine at all without keeping histories is unsatisfactory, alike to the practitioner and the patient, and yet it is common practice to neglect this important part of the work. No man can pretend to recollect what he does for his patients, and what he finds from time to time. Symptoms that appear trivial when first noticed often grow in importance with the progress of the case, so that they are indispensable to a correct diagnosis later on, and, if not preserved, are forgotten, to the injury, perhaps, of the patient and physician. We are often called upon to repeat some successful former treatment, which is easily found if a history has been kept, but that cannot be again employed if memory alone is depended upon.

Chapter III.

THE TREATMENT OF FEMALE DISEASES.

Removal of the cause constitutes the first step in treatment in these cases, as in all others, and only needs passing allusion so that it may not be forgotten.

Were I asked to name the single therapeutic measure that is most universally serviceable in the treatment of diseases of women, I should say it was rest—rest as nearly absolute as it can be obtained, and for a long enough time to accomplish its purpose. Nearly all other treatment comes to grief without it. A placebo and rest in bed will give more relief than any other single remedy.

If asked to name the single drug most serviceable in the treatment of diseases peculiar to women, or secondary to affections of her genital organs, it would be *cimicifuga*. Much like *ergot* in its contractile effect upon the uterus, though not as powerful, it also exercises a special soothing influence upon disease of this organ and its appendages. The vertex headache so common to these troubles is promptly removed by it. It may be given in from five to ten, or even twenty, drop doses of the tincture every one or two hours till the desired effect is produced, and continued thereafter as occasion requires. The mental disturbance of female disease, of pregnancy, and of the menopause, yield remarkably to its use. It is worth trying in every case until its inutility is demonstrated by negative results, for it sometimes accomplishes the happiest and most unlooked-for effects.

Next to *cimicifuga*, I believe that the tincture of *pulsatilla* is one of the most efficient agents for the relief of the aching pain incident to female intra-pelvic disease, especially if ovarian. In one to five drop doses of the tincture every hour, it soon gives complete relief, sometimes acting as promptly as an opiate, but without a single objectionable accompaniment or after effect. The relief it causes has the added advantage of being curative instead of palliative, as is the rule with opiates.

A therapeutic point, not so commonly practiced as it might be, is the use of *ipécac* to stop uterine hemorrhage. For this purpose 1-20 or 1-12 grain of the powdered drug, in solu-

tion, is to be given at hourly or half-hourly intervals, and may be associated with an opiate if there is much pain.

Belladonna may be given for a like purpose in two-drop doses of the fluid extract. This should be repeated every one or two hours until effective, or until there is dryness of the throat, papillary dilatation, and facial flushing. The same quantity of tincture of aconite can be combined with the belladonna if the heart's action is very strong; this to weaken the force of the circulation pump.

Ergot has its valued place, and needs but passing mention, though its greater use is in obstetric practice, where its abuse is the rule because of its common routine employment.

Massage, local and general, is of inestimable value if properly practiced, though a damaging procedure in rough, careless, or untrained hands. It should ever be gentle, commencing with light pressure, gradually increased, so that it becomes, at last, sufficient to affect the circulation, but not greater.

Other remedial measures are best considered under the later separate headings.

MARRIAGE VS. GYNECOLOGY.

While no one can gainsay that marriage makes work for the gynecologist, the additional fact is not generally recognized, that marriage also retards the recovery of women under treatment for their special ills. Marriage, viewed as an exciting cause of disease, and persisting in all its fullness, despite the presence of pathologic conditions, is certain to counteract treatment.

We all know how much more readily unmarried women yield to treatment than do those having marital relations. It is not alone occasional coitus, with its consequent local excitation where rest should prevail, that is so damaging, but the many other labors, cares, and worry incident to the care of children and a husband, besides whatever social responsibilities a woman of family feels herself called upon to assume, that handicaps the married woman's recovery from intra-pelvic disease.

Were these facts kept in mind by physicians in such a way as to receive practical attention, many an otherwise hopeless sufferer could be cured or helped, and this in a shorter time than is usually consumed in learning that nothing can be done.

It is very essential, in these cases, to relieve the married patient of the exciting causes of her ailment. If this can be done entirely, nothing else may be needed to insure certain and

complete recovery. Many a pessary is credited with being faulty or useless, or some Doctor is occasionally credited with having improperly placed one, because it has been turned or twisted out of place during coitus. Whoever has used the pessary very much, knows that they are much more apt to stay in place in women who abstain from this function. It is useless to interdict coitus for any lengthy period in most married women, either because the husband will not submit, or because the patient fears that the husband may possibly go elsewhere for gratification. Patients should be plainly spoken to about the cause of their ailments, and those that encourage them. Husbands should be seen and have the matter laid before them. With some patients, these matters are more delicate than they are with others, and in all such the husband must be seen by the physician.

A gynecologic case should, as far as possible, be placed in as favorable a condition for recovery as can be secured. The married woman should, in many instances, have her environments and habits of life changed to conform with the unmarried state, and this should be maintained as long as necessary. It is not always possible to do this, but every little that is done in this direction helps improve her.

Chapter IV.

RECOGNITION AND TREATMENT.

Under this heading, it is my object to consider the commoner ailments of women, devoting only enough attention to symptoms to help recognize the disease, without aiming at giving complete clinic histories. More attention will be given to treatment, however, for the reason that, while the symptoms of diseases remain the same, and have long ago been adequately enumerated, their treatment is subject to constant change so long as the practice of gynecology remains an art rather than a science. And first of all must we reckon with

MALFORMATIONS OF THE UTERUS AND VAGINA.

If it is simply remembered that the vagina, uterus, and Fallopian tubes were originally two separate tubes, the lower portion of which subsequently coalesced, the various malformations are readily recollected. The Fallopian tubes are the upper portions that did not unite. The uterus represents the upper, much thickened, union, and the vagina, its lowermost, thinner, and more dilated portion, the double wall resulting from the union being eventually absorbed. If this persists, we have a septum of the uterus and vagina, or of either, complete or incomplete. If the upper union is incomplete, there results a double horned uterus, and if only one side develops, it is known as a single horned uterus. Persistence of the double wall in the lower part of the coalesced tract constitutes a double vagina. These conditions are also known as uterus septus and divided vagina. The partition may be defective above or below, or at both places. I have seen a vaginal septum in the middle of the canal, where it formed an antero-posterior band about one inch long, with a concave margin above and below. Occasionally, one sees a cervix without an anterior lip, the median raphé of the anterior vaginal wall extending over upon the cervix to the margin of its os. This makes speculum examinations and work troublesome at times. But every imaginable kind of anomaly occurs that could result from variations of this embryonic double line of union. These anomalies must be looked for, as they often clear up some puzzling situations.

Chapter V.

VULVAR AND VAGINAL DISEASE.

Identification.—These are many, but usually readily detected. Catarrhal conditions are the same as those elsewhere, except that they may be gonorrheal. Ulcers should occasion a strong suspicion of syphilis. Growths are readily discovered, inspected, and removed. Swellings may be due to new growths (tumors), bloody effusions, or collections of pus. Each has its associated symptoms, here as well as elsewhere, and they require no special elucidation.

Treatment.—Any detectable cause of vulvar or vaginal disease should be promptly removed, and this alone will effect a cure if the disease is recent, but, if of long standing, it will have so modified the local nutrition as to require separate treatment.

Inflammation of the mucous membrane (catarrh) is best treated by local emollient, and slightly astringent, douches in acute cases, and by stimulating douches in chronic or sub-acute conditions. Of the former, a good one consists of borax and a little bi-carbonate of sodium, together with a like quantity of sodium chloride, say one dram of each to one quart of warm water, and this may be followed, if necessary, with a glycerine and ichthyol gelatine vaginal suppository. An opium and belladonna suppository (gr. $1\frac{1}{4}$) may also be added if there is pain. I find a hot carbolic solution as good as anything that can be used for chronic cases requiring local stimulation. These injections may be repeated two or three times daily, and sometimes oftener, especially if they make the patient feel better.

Pruritus vulvae is exceedingly troublesome to the patient. A five per cent. carbolic acid and glycerine solution forms a good and cheap anodyne wash. It smarts at first, and then benumbs the parts at the same time that it acts as an antiseptic. Tannic acid or alum may be added for their astringency if the parts are very red and swollen. Sometimes a wash of plain table tea is very serviceable, but it must have been boiled about an hour so as to get its tannin in solution.

New growths are readily detected, and should be removed, especially if they are growing larger, or if they are painful or otherwise seriously annoying. Their nature should be deter-

mined, especially in the aged, so that proper steps may be taken in time if they are malignant.

Ulcers of the vulvo-vaginal mucous membrane are treated of elsewhere, but should always arouse a suspicion of syphilis, and if they do not respond to appropriate local treatment, constitutional specific treatment should be begun without delay, regardless of any protestation of innocence the patient may make. Very often conditions are such that this treatment must be adopted without questioning the patient, for reasons that we all understand. Under such a course, many ulcers rapidly disappear.

Swellings due to tumors are denser than those caused by blood or pus, and only need be referred to. Those due to bleeding arise suddenly, with more or less pain, are devoid of throbbing, and reach their maximum size within a minimum time. If small, they may be left to themselves, but if large, painful, or obstructive, the cavity should be entered, all clots, blood, and debris removed, and the parts aseptically irrigated, drained, compressed, and dressed. Abscesses form gradually, with more or less dull, steady, pain, becoming sharper and throbbing. Fluctuation is, at first, absent, and then gradually makes its appearance, and continues to increase, both in area and distinctness, at the same time that it becomes more superficial. There is, as a rule, local heat and marked tenderness. The cavity should be aseptically opened, evacuated, irrigated, drained, and dressed.

Subsequent inspection and irrigation, after opening an abscess or hematoma, must take place as often as is necessary to keep the parts sweet and clean. If they can only be seen at long intervals, say one or two days, some one should be carefully instructed in the proper way of dressing and irrigating the parts. Should even this be impossible, the dressing must be an aseptic absorbent one, and large enough to easily hold all the discharges till the next visit of the attendant.

DANGEROUS VULVAR HEMORRHAGE.

Dr. Clyde S. Ford,¹ of Wheeling, W. Va., reports the case of a Jewess, thirty-two years of age, and six weeks past her last parturition, resulting in a still birth. In stepping over the back of a seat in a theatre, she fell so that her vulva struck the top edge of the seat back, resulting in a laceration of the vulva between the labium minorum and the clitoris, that caused a hemorrhage ending fatally within less than an hour. She

¹"Fatal Hemorrhage from a Slight Wound of the Vulva," *New York Medical Journal*, January 9, 1897.

walked but one block, was taken to the hospital in an ambulance, where she was subjected to treatment by stimulants and hypodermic injections of saline solutions, notwithstanding which she died within less than an hour of the accident. A uterine hemorrhage had been expected, but this was found not to be the cause. Upon arrival at the hospital, she was examined, the laceration found, and artery forceps applied, but these proving inadequate, the entire torn surface was caught up and tied, and a compress applied over this as additional security against further bleeding.

The saline injection might have been more efficient had it been intra-venous instead of hypodermic.

This recalls a case to which I was called about seventeen years ago in a well known New York hotel. The patient was a bride, and had been married that very day. She was bleeding profusely. It was the result of an initial coitus, in which, the husband positively affirmed, no undue violence had been exercised. Examination being refused, an astringent was ordered, and the husband directed how to use it. Within an hour I was again summoned, and this time permitted to examine her, as the hemorrhage still continued, being so profuse that the blood had passed through the mattress to the floor, and the patient had become very pale, faint, and anxious. A transverse rent was found extending through the labium majus opposite the upper margin of the introitus vaginæ. It was about three-fourths of an inch deep and one inch wide. The bleeding was venous and profuse. A styptically prepared tampon was held against the wound surface, and forcibly retained by means of a compression bandage. This was renewed in the morning, as there was a tendency for the bleeding to begin again. She recovered sufficiently to leave the hotel for home—beyond which I never knew more of her. Upon inquiry, I found that similar injuries, due to like causes, had been observed by others, but without fatal results.

If these cases teach anything, it is the necessity for immediate ocular inspection as well as digital examination of the genitalia in all cases of sudden severe hemorrhage from this region. No false delicacy should be permitted to stand in the way, because even a short delay in the recognition of the real cause may entail fatal results.

Chapter VI.

ABOUT MENSTRUATING WOMEN.

Intelligent women are, as a rule, cleanly. They often extend their body ablutions to the inside of the vagina by douching. Most women use the syringe once or twice daily if they have a leucorrhea, however slight it may be. And yet how few ever adopt this same precaution during menstruation? Very few.

It is an open question with me as to how many septic uterine troubles are contracted during menstruation. The menstrual blood collects to some extent in the vagina, especially over night, and thus forms a pool of culture medium at a favorable temperature for the development of disease germs. This alkaline blood pool also neutralizes the normal acidity of the vaginal mucus. The pool extends from the uterine cavity to the vagina and vulva, which latter is in contact with an unantiseptised cloth, covered and soaked with exuded blood. What wonder, then, if a leucorrhea occasionally follows the menses for a number of days? The wonder of this all is that it has not been realized long ago.

There is no objection, in the larger proportion of cases, for menstruating women to douch themselves night and morning with a normal salt solution to which borax has been added, say a dram each of common table salt and of powdered borax to the pint of water. This should be thrown in lukewarm, or a few degrees higher, to avoid chilling, and it should, of course, be done in a warm room.

There is prejudice against this, very large among women and considerable among physicians. But it is easily overcome. The good effects, and the comfort, resulting from the practice are so evident that they are gladly continued. There is a wholesome fear of checking the flow, and thereby doing damage. Some of the most scrupulously particular douchers between periods are hard to convince that the practice may be continued through this period without danger. But they soon learn that it may.

An unusual, though occasional, peculiarity, is the stoppage of the menses by the wearing of a cloth. There are women who cannot wear anything to catch the flow without stopping it at once.

THE PHTHISICAL TENDENCY AT PUBERTY.

The two critical periods through which every woman is by nature destined to pass, unless she dies prematurely, are puberty and the menopause. We all know their attendant discomforts, and many of their dangers. Because of the vigor and buoyancy of youth, the first change attracts too little attention, but the second gets its full modicum of consideration because it is more evidently troublesome, and for good reasons, as it appears after much of the battle of life has been fought, and its numerous, vicissitudes have left their indelible marks, both upon the constitution and the face of their victim. The bearing of children, and their subsequent rest-disturbing and brain-exhausting care, reduce the buoyancy of youth, curtail the powers of resistance, and thus, with the added cares and labor of life, suffer the body to succumb to influences which were readily resisted in earlier years. It is thus that the menopause has received much attention, and that puberty is left to find its own way as safely as it can through the shoals of uncertainty, but, at times, with fatal results in one regard, at least, as we shall see.

It was Brehmer, the proprietor and superintendent of the largest hospital for consumptives in the world in his day, at Görbersdorf, Germany, who strenuously insisted upon many occasions that consumption very often had its origin at the time of puberty. He cited case after case in corroboration of this view in his book upon chronic pulmonary consumption. Yet the fact has not grafted itself upon the minds of practitioners as so important a matter deserves.

The tremendous effect of puberty upon the body at large is manifested by the general trophic alterations, as, for instance, the rounding of the limbs, the altered carriage, and the awakened consciousness of sex, and its attendant modesty in the presence of men and boys. Frolicking is diminished or ceases altogether. Minor changes also occur that are not necessary to enumerate to medical practitioners. The striking change, and the one that most impresses the girl, is the commencement of the menstrual flow.

All these innovations make an increased demand upon the heart and upon the nerve centres. The result is greater nervousness, increased tendency to fatigue, and proneness to palpitation upon moderate exertion. It is in the palpitation upon relatively slight exertion that Brehmer insisted in seeing the first step to phthisic degeneration. He maintained that the cause of phthisis, primarily, was insufficient nourishment of the lungs, due either to a small heart or disproportionately large lungs. In girls, who before puberty had enough cardiac force

to properly carry on the bronchial circulation, he claimed that the strain of puberty upon the heart was frequently sufficient to lead to deficient bronchial circulation. This, then, became the forerunner of a low grade of bronchial catarrh, which, in turn, only added to the heart's work, and thus increased the difficulty. The patient had, meanwhile, begun a descent from the normal plane of health, from which there was no extrication except by the permanent strengthening of the heart, and improvement of the bronchial circulation.

His convictions were not negated by the germ theory, for, as he contended; this condition made the favorable soil for bacilliary infection, or it led inevitably to a catarrhal phthisis that eventually killed, even without infection. Rest, fresh air, and strengthening of the heart were his remedial measures in these cases. He guarded against the evil effects of overstudy by interdicting all studies if they interfered with the progress of his patient. The effect of overexertion upon all action, both voluntary and involuntary, is well established. Excessive expenditure of energy uses up the vital stock on hand to such an extent that not enough may be left over to properly carry on the lower, but more necessary, so-called vegetative functions of the body, with inevitably disastrous results if long enough continued.

It then becomes evident that young girls merging into womanhood should be carefully watched for signs of a failing heart lest they drift into that scourge of modern civilization—consumption. The most essential aim is to make of every girl a strong, healthy, well-developed woman. With this attained, all other objects become easier of accomplishment. Palpitation is one of the very first danger symptoms, and loss of appetite is another. To these may be added anemia. Cough betokens that sufficient progress has already been made to set up local irritation in the lungs. Most cases come to us at least thus far advanced, solely because parents attribute all unusual symptoms at this time to pubescence, and confidently assume them to be safe and natural erraticisms of this critical period.

When these cases come to us for treatment, it is our first duty to impress upon both patient and parent the gravity of the situation. At the very beginning, no expense must be spared to place the girl upon a plane of safety at the earliest possible moment. She should be taken from work; must have plenty of rest; has to be well fed as to quantity, quality, and frequency; and she ought to have a suitable amount of pleasurable outdoor exercise, preferably in the open country or in a large park. I may also add, as I fear that I may other-

wise be misunderstood, that by abstinence from work is meant that which is done in the workshop, factory, household, school-room, or anywhere else.

The well-known strictures, repeatedly made by Skene against the injurious effects of overstudy upon young girls, should be treasured by every practitioner. Much the same may be said against an artificial social life, such as prevails in many of our larger cities. It must not be forgotten that a girl does not become a woman promptly upon the first appearance of her menses, but that for some time thereafter, usually several years, she is in a transitional state, and that the less nature is hampered in the proper moulding of the individual, the better for that individual. A girl naturally below par, especially if descended from defective parents, or if she has a highly sensitive nervous organization, not only has all she can attend to to adjust herself gradually to the strains of maturing womanhood, but she is likely, despite nature's best efforts in her behalf, to require extraneous aid. This it is the physician's duty to give, and it is folly to render aid on the one hand while continued overwork is permitted to more than cancel this upon the other.

An interesting case of delayed menstruation was reported by Dr. J. F. Wolfe,¹ being that of a woman who had not menstruated until forty-two years of age, when she was very much frightened by an idiot, menstruation following almost at once, and continuing for two or three days. Thereafter the flow returned at regular intervals until she became pregnant, in due season bearing a living child after a labor of only thirteen hours.

MENSTRUATION VIEWED AS AN ELIMINATION PROCESS.

Dr. Arthur W. Johnstone,² of Cincinnati, O., takes the position that menstruation is a process of elimination, and declares that the discomforts following its suppression at any time other than during pregnancy are due to autointoxication from incidental retention of poisonous material. Its cessation during pregnancy causes no such disturbances because of the use of the toxins or toxin-producing material in the growth and development of the child. Then he adds that the mother eats food for two during the entire child-bearing period, whether pregnant or not, and that she gets rid of the excess by menstruation when not pregnant.

¹*Lancet*, August 6, 1898.

²"Autointoxication from Defective Menstruation," *Journal of the American Medical Association*, September 1, 1900.

The elimination idea of menstruation is a fair enough proposition, and may be right, and there can be no doubt that obnoxious material is thrown off in this way as well as with all other material expelled from the organism. But to say that a periodic excretion is governed by the same rule as one that is constant, is to go too far. Even the renal excretion can be substituted by the skin and bowel. The author actually holds, first, that an unimpregnated woman constantly eats for two during her menstrual life, and, second, gets rid of all this excess by the monthly outflow from her uterus.

This is rather hard on even average credulity. He adds " * * * every healthy child-bearing woman has a superabundance of nourishment in her blood which must be disposed of in some way." He also remarks that this excess goes to the child in utero, and to it afterwards through the breasts. Also, that menstruation is re-established after the child is weaned.

But how about the occurrence of the menses regularly during lactation, and during pregnancy and lactation combined? Furthermore, what becomes of the well-established fact that excision of the menstruating organ, the uterus, is followed by none of these troublesome symptoms, attributed by Dr. Johnstone to deficient elimination, so long as the ovaries are retained, or even a portion of one, while excision of them is followed by the usual troublesome signs, though the uterus remains? The fact is that these troubles are not so much due, if at all, to autointoxication as they are to perturbations of the nervous system due to attempted adjustments to altered conditions.

While I am far from denying the probability that menstruation may be a useful elimination process, I do think it is only so incidentally, if at all. There is no other evidence justifying any other inference. The idea that a woman eats for two during her whole menstrual life, and gets rid of the excess, which must be one-half of what she eats, by a monthly uterine flow, is absurd. Then all disturbances due to arrested menses, other than pregnancy, would be curable by putting our patients upon half diet. How easy! And are we soon going to obviate the bad effects of overeating in women by giving an emmenagogue?

If women between, say, 14 and 45 years of age all ate for two, they should be voracious eaters, should certainly eat at least as much as men, whereas the fact is that they do not eat as much. And why should women require a menstrual let-out for her overeating as against man? Then where does that

woman stand who eats for herself and one child, and gets twins or triplets, or is even more abundantly blessed (?), as sometimes happens?

He says, "All child-bearing women eat for two." This is to grow the child. But she overeats several times the weight of her uterus and all its contents at term during the nine months of pregnancy, and she has no menstrual flow to carry off her surplus. Referring to this, he remarks, "If the fetus does not consume the extra amount that she has put into her blood, she has to dispose of it herself as best she can." He claims that this puts double work upon her excretory organs, especially her kidneys. She has no longer the menstrual flow to help her out. Therefore she is subject to disease of her kidneys. But why are not her kidneys deranged when her menses are suppressed by other causes than pregnancy, and all her surplus must be worked off by her excretory organs? This elimination theory of Dr. Johnstone is tantamount to saying that a single menstrual flow carries off all the excess the woman has ingested since the preceding period, and a corollary to this is that the sum of nine menstruations should equal the weight of the mature fetus, its placenta, and the amniotic fluid. It is unthinkable illogical.

But this is not surprising when he adds " * * * I have cured one case of rheumatism by trachelorrhaphy." It brings back to mind a surgeon, now dead, of local celebrity in another city, who cured everything by cutting urethral strictures, real or imaginary, and one day capped the climax by expressing his determination to cut his horse's urethra to cure him of epizootic.

I do not intend to be abusive or sarcastic, but am simply earnest. What I wish to show is that the Doctor's position is untenable. He has failed to note all parts of the problem he thinks he has solved. The question is not as small or as simple as he would have us believe. Menstruation, gestation, and lactation are normal processes having their proper cycles, with incidental nervous influences varying in kind and degree, just like dentition and ossification and other physiologic functions. If the problem is to be solved, it can only be by reasoning from positive facts, and these have not yet been ascertained.

Chapter VII.

DISTURBANCES OF MENSTRUATION.

AMENORRHEA.

Identification.—This trouble is easy of diagnosis. It is usually self-evident. But it is important to learn its cause before it can be rationally treated. It may be due to constitutional states that preclude forcing measures, as in chlorosis, anemia, and chronic or wasting diseases, or atony due to mental depression, laziness with overfeeding, or sedentary indoor habit. Local causes are, absent or undeveloped genital organs, ovarian disease (cystic), ovarian or uterine atrophy, and uterine or vaginal occlusion. The cause should be diligently searched for.

Treatment.—When this trouble is due to any special cause, this must be removed.

An imperforate hymen must be opened, the older method being a moderate-sized opening made aseptically, covered with aseptic gauze or other absorbent until the uterus and vagina begin to contract, when the orifice should be opened to its full capacity, and the entire mass of retained material at once evacuated, and the utero-vaginal canal irrigated with the hot carbolic solution. Other occlusions of the tract should receive corresponding treatment.

In the olden days there was more reason for the gradual evacuation of an overdistended uterus and vagina of the blood that had accumulated from numerous menstruations than there is at the present day. This is because of our present ability to readily prevent the growth of deleterious micro-organisms. Formerly, the wide opening of the closed introitus vagina, and the sudden evacuation of the retained menses, left a large, flabby, utero-vaginal sac that often caused a feeling of weakness due to deficient tone, a large, ill-conditioned absorbing surface, readily infected by germ-laden implements.

These conditions do not now, however, any longer exist, except to the most limited extent. The most scientific and the most efficient plan, under the modern technique, is to freely open the canal, evacuate its contents, dilate the introitus, and then flush out and pack the utero-vaginal canal with aseptic douches

and gauze. This treatment, besides giving relief to an old condition, insures proper contraction and tone to the affected tract, thus avoiding that unpleasant feeling of faintness, together with the prevention of septic infection. Recovery is rapid and uneventful.

Circumstances might possibly arise requiring the gradual evacuation process, but they are not probable. Unless there is some special and well-defined contra indication, I believe it to be the best rule to evacuate immediately and completely.

If due to uterine or ovarian atrophy, or arrested development, the proper remedy is Faradic electricity and massage, together with *cimicifuga* (gtt. x every three hours), fluid extract of ergot (gtt. x t. i. d.), and either aloes or tincture of cantharides thrice daily, the former being preferable in constipation, when it must be given in doses sufficient to meet this indication, while the latter is to be given (gtt. x. every three hours) when the aloes are not used, especially if the urine is high colored and scant. Faradism and massage should be applied on alternate days, and, as I have previously stated, massage is best administered by gentle bicycle riding on a plain leather saddle.

When due to absent organs, or to cystic disease of both ovaries, it is incurable. The condition, however, that is most often met with, and that requires the most skill for successful treatment, is the amenorrhea due to remedial constitutional causes. Of course, that due to pregnancy and to incurable wasting diseases, such as phthisis, is not now under consideration. Anemia is one of the commonest causes of amenorrhea. Attention to hygiene, such as wholesome food, free elimination, sanitary habitation, plenty of sleep, with early rising and moderate out-door exercise, alone form one of our best means of curing this condition. If digestion is at fault, it must be corrected. If assimilation is defective, it must be rectified. Many anemics are voracious eaters, without any gastric disturbance. In them, assimilation is at fault. The exact trouble must then be searched for and remedied. I refrain from discussing this matter in detail because not within my present scope.

The medicinal treatment specifically directed to improving the quality of the blood is accomplished by means of preparations of iron or manganese, alone or combined, in a form ready for immediate assimilation. Some excellent preparations of this kind are now upon the market, one a peptonized manganese that has proven itself very serviceable in my hands, and another of iron and beef extract that is equally as good. The gold preparations have also proven themselves very efficient,

especially when given hypodermically. I may also add that the practitioner must take into account the general atonic condition of anemics, and I know of no better plan of aiding the blood-improving remedies than by giving *nux vomica* freely, thereby toning up the system, and hastening a favorable turn. I give $\frac{1}{4}$ or $\frac{1}{2}$ gr. of the extract thrice daily to adults; minors in proportion.

The treatment of chlorosis is substantially the same as that for anemia, though less amenable to remedial measures. In these cases, either *cimicifuga* or *pulsatilla* may be added to the other agents, the latter being more indicated in ovarian irritation. Changes of climate, habits, food, etc., have their value, and should be taken into serious consideration if the patient is able to try them, but they should not be mentioned if she is not, because she may look upon the impossible means of relief as the only one of value, thus seriously hampering the salutary influence of other measures.

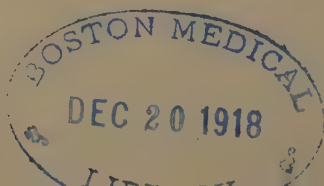
If laziness, overfeeding, or sedentary habits seem to cause the trouble, they should be corrected; in fact, this should be done whenever possible, under all conditions, for the broad reason that it is always in order to break up reprehensible habits.

When mental depression is, or seems to be, the cause of amenorrhea, the tincture of gelsemium (gtt. x every three or four hours) is often very useful, especially if the depression is due to dread of something that is expected to happen, such as an anticipated death, a marriage, an examination, a meeting, impending losses, etc. In other cases, I have found hyoscyamus or belladonna very useful, while in suddenly developed cases, and hence not likely to be long continued, five-drop doses of the tincture of opium, two or three times daily, are decidedly efficient.

Amenorrhea caused by sudden shock to the nervous system, as fright, grief, excitement, or pleasure, is best met with sufficiently large doses of the bromide of potassium to quiet the nervous system. I usually employ a half dram, at hourly intervals, until the patient is indifferent. High mental excitement is sometimes markedly relieved by hyoscyamine (gr. 1-100 every hour).

MENORRHAGIA AND METRORRHAGIA.

Identification—Menorrhagia and metrorrhagia, signifying, respectively, monthly bleeding and uterine bleeding, generally indicate excessive menstrual flow, and uterine hemorrhage be-



tween periods. A good name to include all kinds of uterine bleeding would be hysterrhagia, which, though etymologically no better than metrorrhagia, has the advantage of not being, by long custom, limited in its significance. The bleedings have many causes, among which may be mentioned general plethora, polypi, cancer, fibroids, retained placental tissue, fungous endometrium, subinvolution, uterine displacements, chronic ovaritis, and others less common. The cause should be discovered and, if possible, removed.

Treatment.—Menorrhagia, if due to plethora, is normal, and requires no treatment. If due to polypi, they must be removed, as elsewhere stated. If caused by cancer, the only remedy is removal of the growth, or of the entire uterus. When caused by fibroids, the cervix must be dilated, and the offending body removed. I know of no way as effective and as safe for this purpose as the method of Dr. John Byrne, of Brooklyn, N. Y. This consists in burning it out with the galvano-cautery. The resulting hemorrhage is very slight, there is no infection, there is little or no serious shock, and patients usually make a rapid and uneventful recovery. After full dilatation by tents, the uterus is pulled down to the vulva with the vulsella, or hooks, held by assistants. At intervals, the uterus is irrigated with a mild antiseptic solution for the purpose of removing debris, and permitting a better ocular and digital examination of the parts, the latter being bimanual.

Retained placental tissue is removed by means of 1, dilatation; 2, the polypus forceps; and 3, the curette; the uterine cavity being subsequently irrigated.

A fungous endometrium should be curetted, and I may add here that there should never be the slightest hesitancy to dilate the cervix before operations upon the endometrium of the body of the uterus, for it generally saves time and, often, trouble. The curette should be used with judgment and care. If the sharp one is employed, it should be so introduced into, and so manipulated while in, the cavity of the uterus, that its sharp edges are not drawn longitudinally over the endometrium, for that is likely to cut and make needless trouble. It should rest with its free end against the uterine wall close to the fundus, whence it is drawn directly to the internal os. It is then lifted and carried back to the starting point, and brought down again. It is thus successively carried back and forth, scraping the wall in its downward passage only, and gradually moving around until it has made the circuit of the uterus. Though the bleeding is free at first, it soon subsides, ceasing altogether as soon as the muscular tissue has been cleared of

its mucosa. This is recognized by the grating feel and increased resistance. The curette is finally passed across the fundus from side to side, or from before backward, or both, until that is cleared. Aseptic irrigation is then in order, after which the uterus may be packed with sterile, or iodoform, or other similar, gauze, according to the predilections of the operator, or as the seeming necessities of the case may indicate.

Subinvolution is due to a local or constitutional cause, or to original uterine inertia. Causes must be removed, for, while they exist, local treatment is necessarily only palliative. The general health must be raised to the normal standard, if possible, and local causes be promptly attacked. In uterine atony, ergot and cimicifuga, singly or together, are the remedies par excellence, but I believe cimicifuga to be the more valuable in the older cases, and ergot in the more recent ones, though both together often accomplish what neither will do alone. Warm vaginal douches twice daily, and local massage (gentle), are valuable adjuncts. The massage is given bimanually.

Metrorrhagia, signifying an intermenstrual flow, and due to the foregoing causes, requires identic treatment.

GELATINE INJECTIONS.

A sterile 10 per cent. solution of ordinary gelatine is highly extolled as one of the very best means of arresting bleeding. I have had no occasion to use it, but mention it for trial by those who choose to do so. The formula of Siredey¹ is, 7 gm. of sodium chloride and 50 gm. of gelatine to the liter of water, sterilizing all at a temperature that must not exceed 105° C. The addition of 1-1000 part of the bichloride of mercury, or the 1-100 part of phenic acid, will preserve it indefinitely. Hayman² used 140 c.c. of a two-and-a-half per cent. neutral sterile solution of gelatine in normal salt solution, throwing it under the skin after having heated it to 40° C. Upon a recurrence of the bleeding some days later, when the tampons were removed, 240 c.c. were again injected with like satisfactory results, and 160 c.c. more on the next day, as an extra precautionary measure. Then Dr. Nichols³ tells of a severe persistent hemorrhage continuing for a long time despite all efforts to control it, which, nevertheless, stopped at once upon the local application of a sterile ten per cent. solution of gelatine.

The original combination of gelatine with chloride of calcium as a remarkable hemostatic is credited to Tremolieres, of

¹ *Revue Med.*, Dec. 21, 1898.

² *Münchener Medicinische Wochenschrift*, Aug. 22, 1899.

³ *Medical News*, Dec. 2, 1899.

Paris. He combines a five or ten per cent. solution of dry gelatine in distilled water with two per cent. of chloride of calcium. With this he was able to instantly stop bleeding from the cut surfaces of the liver and spleen after exsection of parts of these organs.

THE ARREST OF BLEEDING BY MEDICINAL MEANS.

Ergot is the remedy so closely associated with the successful arrest of uterine hemorrhage by medicinal means, that it is at once associated with the like treatment of all kinds of bleedings. This would be logical enough except for the fact that uterine hemorrhage differs in mode from that of all others. The mechanism, as it may be called, of its arrest is really mechanic—indirect. The arteries coursing sinuously through the muscular uterine wall are constricted and compressed by the enveloping fibers, thus shutting off the blood current. This condition, however, does not prevail elsewhere. The only hope of relief, then, is by constriction of the lumen of the vessels by contraction of their own muscle walls, an unlikely result in view of the excessive cramp-like action this would involve, not alone throughout the affected tissue district, but throughout the entire arterial system as well. But this would be impossible, because it would involve a compression of the entire blood mass to a much smaller bulk.

The effect of ergot is to do this to a sufficient extent to raise the blood pressure, and increase the speed of the current, thus driving it with greater force through artificial openings in the vascular system, whether due to trauma or disease. It increases the force of the pump, and lessens the caliber of the pipes through which the same quantity must then flow at necessarily greater speed. To use ergot, therefore, for the arrest of any other than uterine hemorrhage cannot be good practice, is not rational, and should, therefore, be avoided.

On the other hand, whatever will lessen the heart's activity and relax the blood pressure, thereby insuring lessened pumping force together with larger pipes through which the liquid must flow, insures a slower current with less tendency to leave its containing tube. This can be accomplished by means of belladonna associated, when necessary, with aconite.

While uterine hemorrhage, therefore, calls for ergot, bleedings from the nose, lungs, stomach, and bowel, for instance, are more apt to be stopped by the use of enough belladonna to cause facial flushing, pupillary dilatation, and dryness of the throat. If the heart's action remains strong, aconite should be

added in sufficient amount to quiet it. A good proportion consists in equal parts of the fluid extract of belladonna and of the tincture of aconite, 4 or 5 drops being given at a dose.

This treatment is in use by many practitioners, though the bulk of the profession persistently fail to realize its importance. Besides this, endometrial oozing not controlled by ergot, yields readily to the belladonna and aconite, or the former alone if the pulse is already weak.

ON THE USE OF NORMAL SALT SOLUTION.

Normal salt solution is a solution of sodium chloride in water in the proportion of 58.37 grammes to the 1000 c.c. [$15\frac{1}{3}$ drams to the qt.], and a decinormal salt solution is one of one-tenth this strength, of 5.837 grammes to the 1000 c.c., [$1\frac{1}{2}$ drams to the qt.] an equivalent of a .6 of 1 per cent. solution, blood plasma containing 55.100 per cent.

The object in using the saline solution is to sufficiently augment the bulk of blood in the body so as to give the heart and vessels the resistance required for efficient action. It has the advantage over all other liquids in more closely approaching blood serum in its chemic and physic aspects, being virtually equivalent to blood serum. That it must be absolutely aseptic, when used hypodermically or intravenously, hardly requires mention.

It is given by the mouth, by the rectum, under the skin, or directly into the veins. The efficiency of these methods is in the order named, the last being the most efficient. The first is named as a channel of entrance, though seldom used. The rectal method is the one most commonly employed, though often in insufficient amount. This route requires the instillation of the liquid by the quart in adults, and in proportion in children according to bulk of the body rather than age. Small amounts, say a few ounces at a time, are useless in an adult. Injection under the skin (hypodermoclysis) is considerably used, but must be carefully done for the reason that the sudden instillation of too large an amount may cause sloughing of the supernatant integument, by its forcible tearing from its connecting nutrient vessels and trophic nerves. This has happened, and is, therefore, a likely danger. It is, however, guarded against by the slow injection of the liquid, so slow that the skin is not much raised, no matter how much fluid is passing in, the inflow being held back so that it just equals the absorption of the injected fluid by the passing blood stream. The intravenous injection of the saline solution must be done with the greatest care, special attention being requisite to guard

against the admission of air, as this would cause thrombosis (probably fatal), and of germ infection. This is the most efficient, the most dangerous, and the most difficult of the procedures for adding to the blood bulk by the addition of salt solution.

Of the four methods, the one most general and safely useable, as well as efficient, is that by rectal enema. The *per orem* method is apt to nauseate, and absorption is often too slow, even if the solution is not rejected. The subcutaneous method has its dangers from trauma and germ infection, while the intravenous is open to the objection of possible infection and of air emboli. While the intravenous is the most rapidly effective after it is begun, much time is consumed in getting ready. The subcutaneous method is slower, but may be begun sooner. So long, therefore, as there is no immediate hurry, it is best to use the rectal method as being the safest, easiest, and sufficiently rapid in effectiveness to answer every purpose in most instances.

The mode of action of the saline solution is purely mechanic. It raises the arterial pressure when this is lowered by lessening of the blood bulk, say from bleeding or serous drain, as in profuse diarrhea. It furnishes enough blood bulk for the heart and vessels to close upon. The vascular tone may be too low to follow up the lessened blood bulk, thus becoming flaccid. There is a resulting sense of looseness, of goneness, of collapse. The head swims, dark spots appear before the eyes, and consciousness may be lost. These symptoms are all relieved by the increase of the bulk of blood from absorbed salt solution.

During the relaxed vascular tone, there is interference with some of the bodily functions, noticeably that of the kidneys, which require a certain blood pressure to properly functionate. The abeyance of this function is dangerous, and salt water enemas will prevent a catastrophe of this kind in suitable cases of much lowered blood pressure due to the rapid loss of blood bulk.

It obviates shock from hemorrhage, and is used with gratifying effect in bleeding and shock after abdominal operations, it being customary, in such cases, to inject about a gallon of the fluid into the peritoneal cavity. Here it acts as a foreign body, thus checking hemorrhage; as a mild antiseptic; as a separator of the peritoneal surfaces, thus preventing adhesions; and relieves thirst and shock by filling the blood vessels.

It thins the blood in those conditions in which it is thickened from undue serous discharges, or in dysentery and cholera. It dilutes the poisons that may be in the blood, thus rendering

them less effective, and it liberates them by stimulating the action of the skin and kidneys.

INTRAVENOUS INJECTIONS OF PLAIN WATER FATAL.

A statement recently going the rounds of some of the medical journals, and emanating from England, to the effect that plain sterilized water may be injected into the veins in lieu of the normal salt solution, is **very** dangerous, for it has been repeatedly shown upon animals that plain water rapidly causes death by quick solution of the blood-corpuscles. This important fact should never be forgotten. Better always use the de-cinormal salt solution.

DYSMENORRHEA

Is a very common ailment in virgins, and too often in others, that is easily remedied in most instances. For convenience, this affection may be divided into the neuralgic (uterine), ovarian (also neuralgic), and the mechanic (obstructive) varieties. The first (uterine-neuralgic) is due to altered states of the uterus or its surroundings, other than mechanic obstruction, which lead to pains whenever the uterine or pelvic circulation becomes as active as it must at the menses. It is characterized by backache, and often hypogastric tenderness, and uterine soreness and tenderness, without interference to the flow. The pain usually continues during the entire period. In anemics, the flow may be scant, and this must not be confounded with diminished flow due to obstruction. The second (ovarian-neuralgic) is generally recognized by pain in the lower part of the belly, on either or both sides, increased by pressure. The breasts are often sympathetically affected. Bimanual examination shows marked ovarian tenderness. Frequently, there is associated mental depression. The pain generally precedes the flow for several days. Sometimes the pain occurs on fixed days, between menses; and in some cases reflex or sympathetic pain is felt in some distant part of the body. In the third variety (mechanic-obstructive) the pain is oftenest due to uterine flexion or version, though intra-uterine growths sometimes prevent the ready egress of menstrual blood by acting as ball valves. Other, rare, modes occasionally occur, but they are too exceptional to merit space in the scope of this article. When the trouble is due solely to version, it is attributable to closure of the uterine os by the vaginal mucous membrane pressing firmly against it. If due to flexion, it is caused by obliteration of the uterine canal at the point of flexion in a manner similar

to that which occurs when a hose pipe is bent upon itself to prevent the flow of water through it, the canal becoming flattened and its walls forcibly approximated. The blood then accumulates in the corpus uteri, distending it until the reflex contractions thus engendered force the blood beyond the obstruction. As may be *a priori* inferred, the pain gradually increases until it reaches a climax, accompanied by a passage of some blood, and is then followed by relief until enough is again accumulated to cause the same gradual increase of pain. This process is repeated many times until the canal is sufficiently pervious to permit a natural flow, or it is continued to the end of the menstruation.

Narrowing of the internal os may be so marked as to prevent the egress of blood without active uterine contraction, with consequent severe pain, but this usually occurs but once during each period.

Another cause of dysmenorrhea I believe to consist in a valve-like overlapping of the internal os by the uterine mucosa, this being only overcome by the pressure of the imprisoned blood.

Treatment.—One of the commonest ailments of suffering woman is painful menstruation, and there is hardly anything so capable of prompt relief. The neuralgic variety usually requires drug treatment, while that due to obstruction must be cured by mechanic means.

The neuralgic variety due to uterine irritability, from whatever cause, calls for the use of tincture of cimicifuga, of which from one to three, or even four, drachms may be given per day in divided doses, preferably at hourly intervals, beginning with five drops at a time. Other local or constitutional indications must be met by appropriate measures.

The neuralgic variety due to ovarian irritability, from whatever cause, yields promptly (usually within two or three hours) to hourly doses of tincture of pulsatilla, the amount varying from one to five drops well diluted. Additional treatment must be given according to indications.

The black oxide of manganese in 3-grain doses, thrice daily for a considerable period, say three months, has cured dysmenorrhea. It seems to be most useful when the flow is preceded by pain, growing rapidly worse just as the flow appears, and which tapers off during the first day, at about the end of which it ceases. Its action is upon the nerve centers, and, therefore, not to be given only in palefaced women. It may be given in 5-grain doses, but it is the opinion of some who have used it that the smaller dose is as efficient as the larger one, and that the latter may, if long continued, cause some objectionable signs.

Obstructive dysmenorrhea requires for its cure the removal of the obstruction. If due to an intra-uterine polypus, this should be removed. One of the simplest ways of doing this is to dilate the cervix with tents until large enough to permit sufficient freedom for operation, when a snare is placed about the pedicle of the growth, and the mass strangled off. The galvano-cautery loop is the preferable method if the appliance is available. When versions are the cause, the remedy is in reposition and holding in place with a proper support, the simplest for most cases being a soft rubber ring pessary, though sometimes a properly fitting hard rubber one is better.

Obstruction due to flexions, I treat in the following way. Elliot's repositor is introduced, and the uterus gradually flexed in the appropriate direction (counterflexion) and held there for a minute. The dilator (Palmer's) is then introduced, and the canal distended laterally and then antero-posteriorly for fully half the scope of the instrument. This treatment will, alone, give relief for several months, but the trouble is bound to return gradually after several menstruations unless pregnancy supervenes (and this is not always practicable or possible), and even then it often recurs after involution. To insure permanent relief, I introduce, upon the completion of the dilatation, a soft rubber stem that passes beyond the internal os. It is grasped at one end with an ordinary polypus forceps, and pushed into position so that only the expanded button-shaped lower end is outside, but closely fitted against, the external os. The stem remains constantly in place, requires no further treatment, and readily permits the outflow of menstrual blood. With it, I have cured many cases of long standing severe dysmenorrhea and coincident endometritis. In such cases, the continual discharge from the corporeal endometrium had its outflow checked by the flexion, just the same as occurred with the discharge of the menstrual blood. It seems needless to add that constant paroxysms of pain were the inevitable result.

Unfortunately, while this stem permits the ready outflow of fluids from the uterus, it prevents any from entering the cavity—an objection to its uninterrupted use in those who desire children, and a fact sometimes taken advantage of by those who do not.

But I shall recur to this subject again under the heading of Sterility, in many cases of which this same stem is a most effectual cure.

Narrowing of the cervical canal or of the internal os is also treated by dilatation, which may or may not be supplemented by the intra-uterine stem.

Chapter VIII.

LACERATION OF THE PERINEUM AND CERVIX.

Recognition.—These are so readily detected that they need hardly more than passing mention. The extent of the perineal laceration is recognized by the smooth glazed covering of the healed surface, and its sharp line of demarcation from the normal mucous membrane. The extent of the laceration is also well estimated by grasping the perineal body between two fingers, one of which is in the rectum and the other in the vagina. With this condition, notably as time advances, are associated many other symptoms, such as prolapsus uteri, chronic metritis and uterine enlargement, endometritis, leucorrhea, back-ache, dragging pains, rectocele, vesicocele (cystocele), ovarian tenderness, reduced weight, irritability, lessened or obliterated sexual desire, and often painful coitus. Cervical lacerations are more apt to be followed by endometrial disease and leucorrhea, and not by rectocele or cystocele.

Treatment.—The indications here are to freshen (denude) the torn surfaces, and bring and hold them together. Close inspection of the perineal rent will reveal a well-defined line separating the normal mucous membrane from the healed surface. In a very recent case, say within a few months of the occurrence of laceration, it is only necessary to freshen within these lines, but in old cases denudation must pass beyond them. This is because of alteration of the parts from elongation and bulging of the vaginal walls, shown by varying degrees of rectocele and cystocele. Enough of the torn and relaxed surface must be freshened to take in all "the slack." The shape of the denuded surface varies with the amount of slack to be taken up, and a practical and simple way of determining this is by passing a finger into the rectum, and approximating the sides of the vulva with the other hand. The tip of the rectal finger is pushed vaginawards and held at what seems, in the judgment of the operator, to be the desirable place for the apex of the perineal body. This will be the highest point of the denuded surface, and is marked by a transverse cut of the posterior vaginal mucous membrane over the finger-tip, either with the point of a knife or a snip with the scissors. A couple of nicks should

also mark the highest point of denudation on either side of the vulvar orifice. In consequence of the decided forward bulging of the posterior vaginal wall in some cases, there is a well-marked sulcus between it and the lateral vaginal walls. In such cases the denudation must be carried higher up in each sulcus than in the median line, so as to avoid the two lateral pockets that would otherwise result. In other words, the posterior vaginal wall must remain without pocket or longitudinal folds after the operation, and this is obviated, in cases that promise such a result, by freshening the contiguous surfaces of folds that result from bringing together the torn surfaces of the rent.

During the first few operations, the surgeon should not trouble himself so much with the remembrance of descriptions of methods he has read, as with the common-sense determination to bring together the severed structures at the lower end of the posterior vaginal wall into a firm triangular mass having its base upon the perineum.

The denudation requires the removal of the superficial and deep epithelial layers of the mucous membrane, and the scarred surface. It may be snipped piecemeal with scissors, or it may be dissected off with a sharp knife. It is best to outline the entire area by a knife-cut to the requisite depth before beginning to clear the surface. Care must be taken to leave no mucous surface, as it will interfere seriously with union.

The sutures are passed in from one-fourth to one-third of an inch from one edge of the perineal wound, and out at a corresponding point upon the other side, the first being nearest the rectum, and thence proceeding regularly forwards at intervals of about one-third of an inch. The uppermost suture simply catches each side of the top of the perineal wound and the highest point or points of the vaginal orifice. The other, preceding, sutures pass around outside the denuded surface parallel to the angle of the wound (say parallel to the rectum). Additional (superficial) sutures are introduced along the vagina or perineum if required, one or two usually being necessary per vaginam, but not, as a rule, upon the perineum.

The operator should be careful to include considerable of the deeper tissues in the sweep of his needle. The reason for this is that the deeper tissues are partly muscular, and retract, thus leaving the denuded surfaces puckered, irregular, and therefore not evenly in contact, unless the sutures go back far enough to secure the bracing effect of a bunch of the included fat and muscle.

The dressing is applied after the sutures have been fixed

by compression of the encircling shot, and then cut close to the lead. An aseptic dressing is applied over all, and may be moist (aqueous or oleaginous) or dry. The urine should be drawn off for four or five days by catheter, and the vagina irrigated with a mild disinfecting solution after catheterization if there is any reason to believe that urine has reached the wound. Otherwise, about two irrigations per day are ample. The sutures should be examined daily with a view of tightening any that may be found loose.

The bowels should be moved well before operation, so that they need not be moved for several days after, when a gentle saline purge, conjoined with a glycerine suppository, will usually give a satisfactory start. The object should be to give a soft passage.

There are many methods of operating, and most of them are good, but the method given is the easiest for the beginner, and answers every purpose for the patient. The indications for the cure of lacerations into the rectum are substantially the same. The procedure most readily understood here is the one that first sutures the rectal wall and part of the perineal structure, preferably by means of a continuous suture, after which the usual operation is done, all at one sitting.

The stitches may be removed after the first week. The patient should remain in bed two weeks, if possible. She must be induced to take life easy for some weeks afterward, so as to overcome the vicious habit of the pelvic organs long out of order.

My object in keeping these cases in bed two weeks is not on account of its necessity to insure healing, but because it rests the parts, and aids in a quicker return of the long disturbed intra-pelvic circulation to a normal condition.

A perineal laceration, even when quite extensive, does not, necessarily, entail falling of the uterus, or sagging of the rectum or bladder. I have seen cases of marked perineal laceration, without any discomfort after many years. If the tone of the vagina and rectum and bladder is good, and the abdominal muscles are strong enough to insure rigidity, the perineal body is not always necessary. I believe that it was Dr. Penrose,¹ of this city, who, some years ago, wrote a paper upon this very subject, in which he maintained, and quite properly and successfully, that the walls of the abdominal tube had to be weak and tend to collapse before the pelvic contents would sag; that the atmospheric pressure would keep them up if the belly walls did not sink in. There is much truth in this.

¹ See Penrose's *Gynecology*, Third Edition, Chapter VIII, page 92. "The position of the uterus and the mechanism of its support."

LACERATIONS OF THE CERVIX.

Recognition.—Lacerations of the cervix are so self-evident that they need no description. But I will urge the caution against the diagnosis of this condition being made by touch, for a swelled cervix with a stellate os, or even a well-marked maternal os (a decided transverse slit), may readily be mistaken for a laceration. A tear is always more or less indurated, scarred, at its angle, and sometimes along part of its edge.

Treatment.—Cervical lacerations must have their adjoining faces denuded and then brought together by suture. The principal trouble here is denudation, for the cervical tissue is almost cartilaginous in its resistance to cutting, and the mucous membrane and scar are closely adherent to the underlying structures. The greatest difficulty is, however, encountered in denuding the angle of the rent. For this purpose, I use either a sharp narrow-bladed knife (usually the tenotomy knife of the pocket-case) or sharp straight-pointed scissors. Each side of the rent is grasped by vulsella forceps or hooks, and drawn apart so as to widen the angle to its fullest extent, thus making its tissues most accessible. After denudation, care being taken that the two surfaces fit, sutures are passed, from without in, through one lip of the rent, and then, from within out, through the other at exactly opposite points. The ends are tied, and held up by an assistant, or otherwise kept out of the way. When all the sutures have been placed, the upper one is tightened with shot, and not cut off. The succeeding ones are similarly treated. When completed, the long ends of the sutures are tied together, and the parts aseptically irrigated. Irrigation is repeated twice daily. When there are two or more rents, the sutures of each laceration are kept together in groups. They are withdrawn after ten days, a couple of days longer being allowed for healing here than in perineal cases because of the denser structure of the cervix. The suture ends are kept long because, with them as guides, it is easier to cut the sutures, and withdraw them, while their presence is perfectly harmless.

EVERSIONS OF THE CERVIX SIMULATING LACERATIONS.

Dr. Chas. P. Noble, of Philadelphia, in the *Canada Lancet*, calls attention to errors that are occasionally and easily made, and that may cause complications and affections not a natural part of the affection. He had one single woman of 19 years sent to him for the cure of dysmenorrhea. The os felt as if lacerated, but on inspection it was seen to have a normal rim,

but the anterior lip was everted, and there protruded the hypertrophied anterior and posterior columns of the *arbor vitæ rugæ*. The uterus was dilated and curetted, and the cervix amputated, resulting in perfect relief and the restoration of the parts to a normal semblance.

Another single lady of 35 years was sent to him for the treatment of a cervical laceration and a tumor of the anterior lip. It was only an eversion, with hypertrophy of the anterior *arbor vitæ* column. She was treated like the foregoing case, and with the same result.

He quotes from Fischel and Penrose to show that this condition has been found in children, and is sometimes congenital. One case of Penrose's had the entire cervix full of racemose glands opening within the canal, as is usual, and upon the vaginal surface, thus making of the entire cervix a glandular structure.

The value of these cases, and others like them, is the lesson they teach of being very careful in pronouncing a case one of laceration by mere touch. A cervix would better always be seen. Many of these pseudo-lacerations have eroded cervixes, and sometimes they are roughly granular. It is unpleasant to pronounce an eversion, with or without hypertrophy, a laceration in a woman who has never been in a position to have a laceration. Such an error might work much mischief, both to the innocent patient and her friends, and to the hasty physician guilty of the blunder.

POST-OPERATIVE PARALYSIS OF THE BLADDER.

It is quite a common occurrence, after operations upon the genital tract of woman, to find the patient unable to voluntarily void urine. Why this should be so, it is at present impossible to tell. To call it a reflex paralysis is to admit our inability to explain its cause. It is, however, very important to recollect the fact that many women cannot urinate after operations in no way directly connected with the bladder. Important because, if overlooked, the patient may suffer from vesical overdistention, and its secondary train of symptoms, much to her disadvantage and, perhaps, also much to the discomfiture of the attendant. Thus an old perineal rent may be freshened and stitched together, and the patient be unable to micturate for several days. As I have said, this unpleasant complication may accompany any operation upon the genital tract. Its frequent occurrence after labor is too well known to require special elaboration, but its cause then is evidently pressure paralysis.

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The lesson this should teach is that every operation upon the genital tract should be followed by catheterization of the bladder before the patient is fully from under the influence of the anesthetic. In most instances, especially in country practice, nurses experienced in catheterization are not to be had. In such an event, it is well to call up one or two women to watch the introduction of the catheter. The boundaries of the vestibule should be shown them, with the meatus at its base just above the upper margin of the vaginal orifice. This is necessary so that they may subsequently readily identify it, and pass the catheter when required. This method saves the patient discomfort, and the physician worry and anxiety.

Not long ago, special prominence was given a paragraph going the rounds of the medical journals, in which it was claimed that a reflexly paralyzed bladder may be made to empty itself by injecting a considerable quantity of hot water per rectum. This is worthy of trial in preference to passing a catheter in certain cases, and is, no doubt, highly useful in some, though it may fail in others.

Chapter IX.

VAGINAL DISCHARGES.

LEUCORRHEA ("WHITES").

Recognition —This is the commonest ailment of the female genital tract, and is a symptom of local inflammatory disease, not a disease itself. If limited to the vagina, the discharge is acid, while that from the uterus is alkaline. In consistency, the vaginal flow is a fluid muco-pus; that of the cervical canal is transparent, or nearly so, and very stringy, like the white of an egg, while that of the body of the uterus is less stringy, and apt to be mixed with some blood. Leucorrhea may be caused by congestion, or be due to excessive coitus, menstrual suppression, prolonged lactation, uterine displacements, and from any passive congestion due to obstructed circulation. It is also commonly caused by endometrial and vaginal inflammation, by syphilitic ulcers, cervical erosions, and intra-uterine growths.

Treatment.—The first essential to a cure of this affection is relative rest, *i. e.*, abstention from all active work and coitus. Another, is the cure of any disease of which it is a symptom, such as ulcerations, erosions, endometrial inflammation, and uterine displacements. These will be mentioned under their appropriate heads. Periodic aseptic flushings of the vagina are indispensable, and often cure. A mild astringent must often be added, or a strong one well diluted. Too strong an astringent is worse than useless, as it coagulates the vaginal mucus, and forms it into a thin cast of the canal, which adheres upon all sides and comes away in shreds. Many women get themselves into this unpresentable condition after taking too strong an alum water injection before coming to the doctor. When seen for the first time, especially if a strong suppository has been placed in the cervical canal, the novice is overwhelmed with the conviction that his patient has a cervical cancer or other serious trouble, and this belief is heightened if a bad odor co-exists.

Various gelatine bodies, containing aromatic vegetable and mineral antiseptics and astringents, are now upon the market, and are, undoubtedly, an improvement upon the old-time twenty-minute vaginal douche, with the patient upon the broad

of her back. To those who object to prescribing any of these elegant ready-made medicaments, I would say that the druggist may be ordered, by prescription, to make the same thing, but I feel in duty bound to add that, while this method is the more expensive to the patient, the goods are not as good as the ready-made article. The rule applies to these as well as to extracts, pills, and tablets, the larger manufacturer having the advantage over the retail druggist. Similar combinations are also made in tablet form for introduction per vaginam at night, there to remain until the following morning, when the dissolved mass and mucus are washed out by douching. These substances are not merely palliative, but are largely curative, especially in cases due to simple congestion or to malnutrition. Sometimes they cure endometritis, and, almost always, cervical erosions. They are especially useful in young girls whom it is undesirable to examine, notably if there is no dysmenorrhea.

Gelatine bougies are also made by a number of firms for lodgment in the cervical canal or corpus uteri in endometrial disease. They are most efficient when they do not irritate, a fact that can only be determined by actual trial.

All constitutional defects must be remedied, and tight lacing should always be interdicted. Habits and diet should be regulated, and plenty of fresh air be insisted upon.

GONORRHEA (CLAPP).

Recognition.—Gonorrhea in woman is only positively diagnosed by the finding of the gonococcus. Strong presumptive evidence of gonorrhea consists in great severity of the local symptoms, such as profuse discharge, severe pain, extending even to the rectum, and general disturbances of the body at large, such as malaise and fever. Emil Noeggerath, of New York, started the gonophobic wave in 1876, by his paper on latent gonorrhea. His extreme views found quite general credence after having withstood some violent opposition. It seems to me, however, that the views still held about the persistence of this affliction are too arbitrary, too limited, to be correct. There can be no doubt that there is latent gonorrhea in many individuals, and that it is responsible for many delayed infections ending in every possible way from the mildest kind of an attack down to death, or any of those worse conditions that so many are pleased to call living deaths. But it does not, by any means, follow that the saying "once a gonorrheic always a gonorrheic" is always correct. I do not believe it, for the evidence is against it.

The importance of gonorrhea depends upon its infectious-

ness, its virulence, and its persistence. It is persistent because of the tenacity of the gonococcus, at least that is the accepted reason. The disease dips down into the crypts of the mucosa it invades, and extends along its surface by continuity. The inflammation it engenders often extends to adjacent structures. Because of the existence of the disease at unusual depths from the surface, portions of it are never effectively reached by remedies, and it is thus permitted to continue indefinitely.

The treatment of gonorrhea is, therefore, an unusual problem, for it must be active, persistent, and thorough. The first point to aim at, is the prevention of its extension beyond the vagina. Should it enter the uterus, it is very likely to pass into the Fallopian tubes, and a gonorrheal endometritis and salpingitis is so formidable in its persistent bad effects that it is most often only remedied by the use of the knife. When this is not required, sterility often ensues because of blocking of the tubes. Extension of the disease into the urethra readily lands it into the bladder, and there is resulting gonorrheal cystitis. This is a complication that is extremely bad, not alone because of the incidental pain and harassing desire to continually micturate, but also on account of the hypochondriasis that goes with it, together with the tendency of the entire unhappy condition to become chronic.

Treatment.—Alkaline douches should be used 4 or 5 times a day to neutralize the acid secretion of the vagina, and to cleanse the surface of its mucosa, after which strong antiseptic solutions should be thrown into the infected area. It is best to use some force, and keep the vulva closed so as to distend the vagina and thus permit the fluid to get into the bottom of all folds. I much prefer, for this purpose, as strong a solution of potassium permanganate as can be borne. Nor do I use a large amount for irrigation. I deem it better to use the smaller amount, concentrated, and held in the distended vaginal canal for 10 or 15 minutes. This method accomplishes more, but the canal must have been previously well cleansed by a alkaline irrigation. And I prefer the solution to be as hot as can be borne in comfort, thus imitating nature in her effort to raise local temperature wherever there is infectious disturbance. But the main reason, the practical one, is that it does more good and is less disagreeable to the patient. When the cervix is affected, it should be touched up daily with pure tincture of iodine, and should not be irrigated for fear of carrying the infection up into the body of the uterus.

Otherwise, the usual routine procedure in these cases in regard to diet may be followed, but I have usually found these

precautions unnecessary. I never could see any benefit in dieting a clapp case except under special conditions, and these were mostly idiosyncrasies. Many routine practices are left us by a fanciful past, and we should be careful that we do not subscribe to them too carelessly.

Bladder invasion requires the use of methylene blue, say 2 grains two or three times daily; possibly also the balsamic preparations, and santal oil. Besides this, local irrigation may be required, or the vesical balloon may be found useful.

THE VESICAL BALLOON.

It is one of the usual kind of thin rubber balloons attached to a catheter, around which it is rolled for introduction. After it gets into the viscus, it is inflated and unrolled. If medicaments are previously introduced into the bladder, they are brought in contact with the entire vesical surface as the wrinkles are gradually obliterated by the distention of the balloon. It is said to have successfully cured cases of old cystitis. The best vehicle for remedies is gelatine, as the oleaginous ointments usually soon decompose the rubber. I have had no personal experience with this method, but deem it worthy of trial.

EROSIONS OF THE CERVIX.

Recognition.—Erosions of the cervix are very common, and give rise to troublesome and persistent backache, dragging sensations, pain after walking and doing housework, and leucorrhea. They are due to local irritation, often, I believe, the result of friction between the affected surface and the adjacent vaginal wall. Friction may be excessive because of the conformation of the parts, thus causing an abrasion; or the general tone of the body or local tone of the cervix may be so lessened that even moderate friction causes erosion. It may also be due to irritating injections, contact with pessaries, excessive coitus, or any other local exciting cause.

Treatment.—Erosions of the cervix are generally evidences of other local troubles, often displacements, which cause them. Aside from the removal of any causative disturbance, local applications are required, and if the patient be run down, her general health must be improved. It is useless for me to suggest any general line of constitutional treatment, as that would require special attention in each case. As a local application, I favor a stimulating aseptic powder or liquid. The application of a sulphate of copper solution (gr. x to oz. i), after cleansing the parts with water, is effective, a single application sometimes

sufficing. I generally apply a small tampon, moistened in the copper solution, against the erosion, and direct the patient to draw it out by the attached string after four or five hours. A nitrate of silver solution (gr. v-x to oz. i) is equally efficient applied the same way. Chronic cases are markedly benefitted by applying pure tincture of iodine.

Coitus must be interdicted, as also all heavy work and unusual activity, such as dancing, running, or long walks. If there is any ulceration, I like to use peroxide of hydrogen before applying the other solution. I do not have these cases come back until after four or five days, but have them, meanwhile, use a warm carbolized vaginal douche (5 per cent.) two or three times daily. I have often been surprised to have patients with a simple erosion return within this time entirely well, and minus a train of ill feelings that had been sufficient to indicate some serious intra-pelvic disease.

The likelihood of syphilis in cervical ulcerations must not be forgotten. In such cases specific medication should be tried if the trouble does not yield promptly to other treatment. If necessary, the copper or silver solution may be modified in strength either way. A course in *cimicifuga* often works wonders when other means fail. The mistake should never be made of continuing local treatment too long, for I have repeatedly noticed that local treatment seemed to continue, if not aggravate, the trouble, which sometimes disappears spontaneously in a short time after local treatment is discarded. By stopping in time, that is before the patient gets tired of treatment, and simply ordering a daily vaginal douche, recovery frequently follows, and you get the credit.

GRANULAR AND CYSTIC DISEASE OF THE CERVIX.

Recognition.—Granular and cystic disease of the cervix is generally accompanied by the almost ever-present backache, hypogastric weight, and leucorrhœa. Viewed through the speculum, the granular character is evident as a mass of "proud flesh," and is an exacerbation, or intensification, of simple erosion. The cervix often is, or seems to be, everted. A cystic condition is at once recognized by the elevation of the vesicles or cysts above the surrounding surface, and the pits resulting from the rupture of preceding ones.

Treatment.—Granular degeneration is an aggravated erosion, and is to the simple cervical erosion what granular lids are to simple conjunctivitis. The local treatments bear the same mutual relation, and are indentic. I have seen good results follow local bloodletting done by slight scarification of

the granular surface. Vaginal suppositories made of glycerine, and containing vegetable aseptic astringents, are very serviceable in these cases, for they also deplete the distended blood vessels. For the same reason, saline purges are also useful at times.

It was my custom at one time to send these chronic cases away from home on a vacation, and this generally improved them. Then I considered the enforced abstention from coitus the cause of cure rather than the change of air, etc. I found, upon further observation, that the woman did quite as well at home if the husband was considerate, but even the best-intentioned are not always so, and this constitutes an element of uncertainty that the patient should not be subjected to if it can be avoided. So I sent the husband away, and left the patient at home. This proved the best plan. It stopped coitus, it gave her opportunity to continue her medical treatment, and she was not deprived of the comforts of home. And last, but important, is the fact that, when away, a woman does lots of visiting that she should not do with intra-pelvic disease, which she does not do if kept at home, while her household care and work are much lessened by the absence of the husband. This is the preferable plan whenever it can be followed.

Cystic degeneration is obstinate, and is to be treated like similar conditions elsewhere. The treatment is surgical. The cervix should be dilated, its cysts opened, and the sacs curetted, scarified, or burnt with caustic or with a sharp electrode of the galvano-cautery. The parts are then irrigated, and an aseptic suppository placed in the canal. These cases are troublesome and persistent unless radically taken hold of. Simple puncture of the cysts may be tried first, as that sometimes suffices.

Chapter X.

AFFECTIONS OF THE BODY OF THE UTERUS.

SUBINVOLUTION.

Recognition.—Subinvolution is a common, and often undetected, cause of much suffering to child-bearing women, inducing slow changes in the surrounding connective tissue, and gradually dropping lower into the vagina because of its increased weight, which also favors version, entails a train of the annoying general symptoms so characteristic of uterine derangement, and leads to many secondary troubles, all of which are remedied by the cure of the subinvolution. Simple uterine enlargement, with flaccidity or atony, is, as a rule, ample ground for diagnosis of subinvolution in a mother.

Treatment.—This common ailment, the vague cause of so much suffering, is usually due either to the carelessness of obstetricians or the contempt with which women too often treat the advice of competent physicians. It is frequently the result of abortion. I believe that many cases are due to the continued use of the obstetric binder, and enforced recumbency for a number of days, both tending to check part of the free circulation of blood through the uterus and its adnexa, thus leading to passive congestion, lessened activity, and imperfect atrophy of excessive uterine tissue.

Among remedial agents, none is so efficient as cimicifuga, which should be given as already described, 5 to 10 drops of the tincture every five hours or oftener if necessary. Venous engorgement is benefitted by hydrastine in 1-6 grain doses every four hours. The daily use of a vaginal glycerine suppository serves admirably to unload over-distended vessels. Ergot has been used with good effect in this condition, but it is not as good as cimicifuga. Faradism is useful in uterine or general atony, but it must not be forgotten that the uterus is a muscular organ, and that repeated contraction of a muscle increases its growth, thus making this agent serviceable only as a local uterine tonic. Massage, slow and gentle, is, in my mind, one of the very best means of causing absorption of excessive uterine tissue in this condition, but this is suggestive and repulsive to many patients, requires more time than a busy prac-

tioner can give it, and can hardly be correctly done by anybody else. One of the most efficient means, however, of giving gentle, persistent, and long-continued massage is in easy daily bicycle riding upon a plain, old fashioned saddle, that fits well up against the perineum and vulva. The discussion of the *modus operandi* of this procedure does not come within the scope of this section, but receives separate attention elsewhere.

Attention to the general health, the avoidance of intra-pelvic irritation, and the regulation of habits need no special elucidation here, but I will suggest that a loaded rectum is a drawback to free pelvic circulation, and, therefore, to be avoided.

ENDOMETRITIS.

Recognition.—Endometritis is simply an inflammation of the lining membrane of the uterus, divided into that of the cervix (cervical), and that of the body (corporeal), and may be acute or chronic. It is a common ailment, entails much unnecessary suffering, and often causes sterility. It is caused by suppressed menses, cold, extension of vaginal catarrh, retention of conception products, excessive coitus, and mechanic injury (instrumental and otherwise). As already stated under Leucorrhea, the cervical mucus exudate is stringy and opalescent or transparent, while that of the body is less so, and mixed with blood. In acute cases, there is active local and constitutional disturbance, such as patulous os, large and soft cervix, hot vagina, free mucus exudate, tenderness, with back and lower belly-ache, dragging in the pelvis, painful defecation, vesical irritation, often bearing down pain, and more or less fever, chill, and general ache. In the chronic cases, there is an old leucorrhea with pelvic ache, increased in severity and extent by exercise, and often secondary vulvitis and extra-vulvar erosions due to the discharge. There is often impaired health, lessened appetite, lassitude, irritability, etc., throughout the general list, indicating continuous intra-pelvic trouble. Locally, there will be some uterine tenderness and enlargement, the characteristic exudate, erosions, and granulations.

Treatment.—This troublesome affection requires constitutional and local treatment. The kind of general medication required depends upon the condition of the patient; chronic malaria requiring arsenic; syphilis, mercury and iodine; defective elimination, alteratives and eliminants; anemia, iron, manganese, or small doses of the bichloride of mercury; nervous debility, nuxvomica and other nerve tonics; and thus through the entire list. In many young women, this alone suffices. *Cimicifuga* should accompany the use of any other

remedy. Hydrastine, or *hydrastis canadensis*, is given with decided advantage in congestive states, especially if the menses are profuse.

Locally, the treatment consists of rest and bathing. The former requires a minimum activity, and abstention from coitus, and the latter, frequent douching with warm soothing or astringent aseptic liquids.

If the affection is limited to the cervix, it may be treated with suitably medicated gelatine bougies, sometimes after the local use of pure tincture of iodine. It is hardly necessary to add that any cause of the endometritis should be removed. In the corporeal variety, local treatment should not, at first, be attempted unless it is of aseptic origin, in which event immediate mechanic intervention is the safest procedure. An endometritis limited to the endometrium is ended by the removal of the affected part. I generally dilate the cervix with a tent, or instrumentally, and which I am to use depends upon the sensitiveness of the parts, and the time at command. After dilatation, the endometrium is scraped away with a sharp curette, after, or during, which the cavity is thoroughly irrigated with a hot carbolic solution, and the procedure concluded by carrying a strip or two of gauze, about one inch wide, to the fundus, and leaving several inches of it protruding from the os into the vagina, thus serving as a drain. Meanwhile the patient is made comfortable with an opium and belladonna (gr. i to $\frac{1}{4}$) suppository. She is then put upon half dram doses of the tincture of *cimicifuga* four times daily. That usually ends the trouble unless there be a co-existing metritis or other congestive or inflammatory condition. The strip of gauze is removed after twelve or twenty-four hours, and is not renewed unless drainage is obstructed. The subsequent treatment should be limited to warm carbolic douches three times a day. Examinations should be avoided for several days after this procedure unless necessary. I usually leave the cure to nature, as in a fracture or dislocation, if the patient is comfortable, without fever, and has a normal pulse.

INTRA-UTERINE INFECTION BEST TREATED BY IRRIGATION.

The cavity of the body of the unimpregnated uterus was once quite sacred ground that few dared invade. Finally it became the duty of every one to scrape it thoroughly upon the slightest evidence of infection. Now there is nothing sacred about the empty uterine cavity. It is invaded at will with indifference, but not without cost, and this sometimes most serious. Women have been womb-scraped to death, curettes have

punched holes through the uterine wall into the abdominal cavity, and many a time has an innocent enough simple endometritis been converted into some dangerous septic variety by an unclean curette expected to do good rather than harm.

We are altogether too apt to run to extremes nowadays, and most absurd extremes at that, too. But very few seem to care. Patients do not know, cannot understand, while doctors are too busy doing much for the little they get, and so depend entirely upon enthusiasts and theorists and faddists. The object of curetting the uterus, when we sift it down, is to scrape away with a macroscopic implement a microscopic object. Think of it! And we make ourselves believe that we do it. We scrape, to be sure, but we do not get away all the "disease" germs. We do not even get away *all* the affected endometrium, for to do so under the circumstances is a complete physical impossibility. Examine post-mortem the uterus of any woman who has been curetted, and note the invariable remnants, in sections and streaks, of portions of the endometrium. This is with the naked eye. Then observe closer, and see more with a magnifying lens. Then, finally, study sections under the microscope. After this, ask what good does curetting do, and, if any, how? There is food for thought in these two questions, and a good head that is honest with itself cannot give a satisfactory answer based upon any of the well-known data.

The fact is that we have gone too far again, in this as in most other things: have half seen a new truth, or an old one in new dress, only to straightway over-apply it. And we add insult to injury by abusing all who do not, at once, agree with us. Finally, we are brought up with a round turn, admit our error, but learn nothing from it otherwise, for we do the same thing again in another way.

The fact is that the presence of a putrid mass within the uterus is a continuous source of infection that saps the energy of its possessor in the effort to overcome its poisonous effects. The removal of such material has almost always been followed by a prompt recession of the bad symptoms it caused. If followed by a cleansing douche, to carry off all detached smaller pieces and fluid and semi-fluid leavings, nature has generally proven herself able to take care of the rest. Subsequently, free drainage seemed more essential than any other one thing. But those who observed the good effects of removal of the mass, like the dull patient who imagines that the swallowing of a whole bottle of medicine at once will cause a more rapid cure, thought to expedite matters by the radical re-

moval of all offending material, even to the smallest vestige. But they do not seem to realize that in attempting this, and it is only an attempt, because physically impossible of accomplishment, they scrape away such efficient barriers against infection as nature has already erected. Then the damage is done. With the gates down, infection has ready ingress, and the reason that more casualties do not follow the excessive use of the curette is because of the saving effect of intra-uterine douching with antiseptics.

Now the better plan, because the safer as well as the easier, and therefore, also, the most widely applicable, is the thorough removal of all infected masses that can be taken away without injury to the normal structures, subsequent liberal antiseptic irrigation, repeated if needed, and free drainage. Seldom, if ever, is it wise to scrape down into the muscle of a uterine wall in infectious cases. The destruction of the endometrium may be wise for other reasons, for instance to stop continued oozing or even free bleeding. We should not forget that mucous, like external cutaneous, structures are constructed to antagonize infectious processes. Muscle tissue has its absorbing lymphatics, but is devoid of the elements of successful defense existing in the mucosa. To scrape away the entire endometrium opens up the lymphatic channels for the ready and unobstructed conveyance of disease germs and chemic poisons to the circulation.

The fact is that the curette has been, and still is being, abused. The truth is that it should be used less vigorously, and more reliance should be placed upon the stimulating, un-irritating, intra-uterine douche, and free drainage.

UTERINE COLIC FOLLOWING INTRA-UTERINE INJECTIONS.

There are few men who graduated twenty years ago who do not recall the admonition of the professor of gynecology, not to inject the uterine cavity, for the reason that there was danger of a serious case of uterine colic. Then followed the recital of an instance or two, showing how greatly it had alarmed the man learned in the ills of women. But little was said of the actual dangers likely to follow such an attack of colic. When it was over, it was supposed to be ended. Now we know different. Its exact cause we do not understand. It is fair to assume, however, that a condition which causes such extreme pain must often be sufficient to force the injected material through the Fallopian tubes into the peritoneal cavity. Just why it is so difficult for the fluid to flow out through the orifice by which it was admitted but a moment before, is hard to say

positively. Some have attributed it to a spasm of the internal os, but I am of the opinion that too much has been laid to this inner door of a woman's characteristic organ. A more probable explanation would be the supposition of an overlapping of the musosa of the internal os, thus forming a valve that cannot be overcome by any pressure the uterus is likely to exert.

The fact is that these attacks of uterine colic do not come on when there is an undoubted outlet for the fluid thrown in. And yet I only recently had, in my practice, an instance of uterine colic that persisted after the introduction of a Palmer dilator. But this is different from the proposition just made. After the colic has begun, it is most readily relieved by a combination of anodynes and antispasmodics. Its nature is similar to the intense pain suffered after nasal douching, when some of the liquid has found its way up into the middle ear. The pain then is excruciating, and is only to be relieved by the hypodermic use of morphine.

The lesson, then, is to use intra-uterine injections only when the entire cervical canal is fully dilated, or with a return-flow instrument, or any equivalent substitute that will insure the unobstructed outflow of the injected fluid as rapidly as it went in. The enormous advantages incident to the intra-uterine injection of medicated or simple antiseptic liquids, outside of the possibility of uterine colic, are so great, that this method of treatment should not be denied a patient.

RHEUMATISM OF THE UTERUS.

There are some who attribute many vague pains and discomforts, occasionally replaced by intenser ones, in the lower abdomen and pelvis, to rheumatism of the uterus. This leads me to suggest that rheumatism is a big word, and does monumental service in hiding diagnostic incompetence. What we do not know about rheumatism would fill a bigger book than one made up of what we do know about this much-debated and yet little understood condition. It is very likely that many vague troubles of the lower part of the trunk may be associated with urine loaded with uric acid, and it is possible that the disagreeable symptoms, even if of long standing, would leave if the condition of the urine was changed by appropriate medication. But after all, is it not likely that giving remedies to cause the disappearance, by solution, of uric acid from the urine is merely the treatment of a symptom, only the cutting away of the yellow leaves of a plant that requires changed conditions, a larger pot, or new soil? In sub-acute or chronic

rheumatic conditions, I always expect, and get, the best results from the old-fashioned, so-called alterative remedies, say colchicum, potassium iodide, and the bichloride of mercury. These act upon the very cells themselves, and thus strike at the root of the trouble. Proper living and fresh air are as essential.

UTERINE CANCER AND OTHER GROWTHS.

Recognition.—The best advice that can be given the general practitioner on this subject, is to learn the size, location, and attachment of the growth, as far as possible, together with its rate of growth, most probable duration, the age of the patient, and her family history. A piece of the growth, or some of the discharge from it, should be removed, and examined microscopically.

Treatment.—As soon as a growth is detected, the patient should be notified, and the nature of the neoplasm determined as soon as possible, especially with reference to malignancy. The proper treatment is removal, and the sooner this is done, all other things being equal, the better for the patient, particularly in malignant disease, the entire uterus, too, if much involved. I purposely refrain from going into a description of the various procedures for the removal of different growths, because this is amply done in the standard text-books and recent periodic literature, with any of which the busiest practitioner has time to fully acquaint himself during his study of the patient.

GENITAL TUBERCULOSIS.

Many inflammatory troubles of the Fallopian tubes, in fact one-fourth of them, are tubercular. This simply means that one woman in twelve, with diseased uterine appendages, is in serious danger of her life from tubercular disease. These patients are usually between 20 and 40 years of age. Of course, other parts of the genital tract are also subject to this disease, the order of frequency after tubal affection being the body of the uterus, ovaries, vagina, cervix, and vulva.

In this connection, it is encouraging to remember that tubercular peritonitis is, for some unaccountable reason, quite readily cured by abdominal section, presumably because of exposure of the abdominal contents to the atmosphere. This fact is as certain as that its explanation is shrouded in mystery. The natural inference that the early removal of tubercular appendages is safe and desirable is borne out by experience. Whenever, therefore, a woman is afflicted with this trouble, the promptest possible removal of the affected area is the only treatment promising a successful outcome, and the patient's chances are in proportion to its prompt performance.

AFTER CELIOTOMY—WHAT ?

The true answer to this heading may yet prove to be the same as a similar one applied to parturition. Not so many years ago, the post-parturient woman was rigidly confined to the same position (dorsal decubitus) for at least nine long trying days, and she was fed upon innutritious slops during that time. No wonder it was a serious matter for her to attempt getting up inside of two weeks, and doing much work inside of two more. The impatient woman who refused submission, as a rule, actually got along better than the one who submitted.

Ever since abdominal sections became plentiful, and of course also before, the patient has been bound down fixedly upon her back for varying lengths of time by the positive injunction of her medical attendant. Later on it was decided that opium should not be given for the relief of pain, for fear of its causing constipation, and salines were given to secure free drainage from the enteric tract, for the dual purpose of washing out disease germs and unloading the bloodvessels, and thus, presumably, lessening the tendency to inflammation and the liability to peritonitis.

Now, along comes Dr. Emil Reis, of Chicago, and relentlessly deals this accepted mode of procedure some sledge-hammer blows. He thinks it more damaging to permit the continuous suffering of agonizing pain and the harassing effect of the dorsal decubitus for a long time, than to ease the pain with an anodyne, say of codein and chloral, which, by the way, do not constipate, and calm the patient by allowing her to assume the least uncomfortable position she can from the outset. If she is not ill, he even lets her sit up in bed on the third day.

Though I have seen Dr. Reis' practice adversely criticised, I do not hesitate to predict that the future will prove him to be right. Then has he not already justified himself by the greater comfort and, at least, equal success attending the practical application of his ideas?

It stands to reason that an ordinary wound of one size in no way differs from another of the same kind of another size, except in degree. They should all heal without causing the patient to become ill. The amputation of a limb carries with it a certain amount of shock, which is in proportion to the amount of the limb removed—to its proximity to the trunk. Shock also attends the opening of closed cavities, and more, generally, in proportion to its size and importance. These cavities are all serous, are joints, either between hard or soft

parts, and the peritoneal cavity is the largest of them all. A certain amount of shock attends its opening, and the handling of its contents. The abdominal wound is a simple incision that ought, and usually does, very readily heal. Unrelieved pain is more apt to retard healing by continuously attracting the patient's adverse attention to the part, thus not only lessening her resisting and recuperative powers, but also possibly, may probably, exerting a damaging influence upon the healing process by direct influence upon the local trophic nerve-supply. The same reasoning applies to intra-abdominal solutions of continuity.

There is, therefore, no good reason, if the patient's strength permits, why she should not, of her own accord, assume the least uncomfortable position after a celiotomy as she does after a labor. If her condition is very painful, she should be comforted with anodynes. Should she wish to sit up after several days, either to eat, or rest herself, she ought to do so. Nor can I see that these movements of the patient can endanger the coaptation of the wound-surfaces if properly secured. It seems to me that a celiotomy case may be as much benefited by change of position as one of amputation. Fracture cases are necessarily different because of another factor, and even in these, ambulatory dressings are now very properly coming into vogue.

Chapter XI.

OVARIAN TROUBLES.

OVARIAN CONGESTION.

Recognition.—Ovarian congestion is characterized by constant inguinal pain and tenderness, much increased by bimanual examination, which also commonly reveals the ovary enlarged and lower than usual. Of course the patient feels worse when she walks, and seeks alleviation, when walking, by bending forward, thus relaxing the belly muscles, and lessening intra-abdominal pressure.

Treatment.—This requires rest, counter-irritation, and the tincture of pulsatilla in from one to five-drop doses every hour until the pain is easier, after which it is to be continued in lessened amount, or at increased intervals, until the cure is complete. In chronic cases, massage is very useful, and I know of no better way of getting this than in moderate daily bicycle riding, especially upon an old-fashioned hard or split-leather saddle. And upon this subject more of a practical nature is said under a separate heading, and I will now only add that the wheel, judiciously used, is a remarkably efficient therapeutic measure.

OVARITIS.

Recognition.—Ovaritis is ushered in by a chill, followed by high fever and all the accompanying symptoms of local peritoneal inflammation. The slightest percussion over the affected ovary (lower belly on its side) causes unbearable pain, and attempts at vaginal examination are, at times, so painful that they must be discontinued.

Treatment.—Ovaritis requires prompt treatment, which should consist of local counter-irritation and depletion, and general medication with a view to relieving pain, and altering, by specific effect, the inflammation. Local sinapisms, hot appliances, cupping (dry or wet), and blistering are the remedies, while opium and belladonna suppositories (gr. i to gr. $\frac{1}{4}$) will relieve pain. Or the clay glycerine compound now in the market under various names may be used instead of counter-irritation; in fact, I prefer it. Tincture of pulsatilla, in five or ten-drop doses every hour, has a selective effect upon ovarian inflammation, reducing vascularity and consequent tension and pain. Prompt and active treatment, as here outlined, almost

invariably results in prompt relief and a speedy cure, it being, however, extremely necessary for the patient to keep as quiet as possible for several days after the subsidence of all pain, if a relapse is to be avoided.

Finally, painting the skin in the ovarian region with pulsatilla adds materially in the relief of pain. It is similarly used internally, as well as over the scrotum, in orchitis, and with equally prompt good effects.

OVARIAN TUMORS.

Recognition.—Ovarian tumors cannot be very readily diagnosed as such, even by the most expert. If seen early, they occupy one side of the pelvis on a plane behind the uterus, though subsequently crowding in front of it. Later, as they mount into the belly, they are found upon one side. They are free from the uterus, rectum, and vagina, though originating in the pelvis. But this does not distinguish them from cysts of the broad ligaments, and other growths not connected with the rectum, uterus, or bladder. The most expert have made errors in diagnosis that were only proven upon the operation or autopsy table. But accuracy in determining the origin of pelvic neoplasms is not so essential as it is to know their nature, and this is readily accomplished by means of an ordinary pocket aspirator and subsequent microscopic examination of the withdrawn material.

Treatment.—Ovarian tumors require removal by abdominal section, and should be attacked, whenever possible, before they reach a very large size, for the longer they grow, the more apt are they to form adhesions. These, together with the largeness of the mass, increase the shock of the operation, and thus lessen the chances of recovery. The simple indications are to open the belly along the median line, and remove the growth. If cystic, the tumor must be tapped or aspirated through the wound, so as to facilitate its removal. When solid, or multiple cystic, the belly wound must be made large enough to permit its extraction *en masse*. The pedicle must be well secured by ligature, and may be dropped back into the pelvic cavity when all bleeding has been positively arrested. The belly wound may then be closed in the usual manner.

These operations may be undertaken at leisure, and therefore admit of full preparation, something that the operator should never neglect, for his failure to observe a little reasonable foresight and some slight precaution may cost the confiding patient her life, and her careless attendant, deservedly, much of his standing and influence.

Chapter XII.

ABORTION.

Abortion is so common an occurrence in the experience of physicians that nothing need be said concerning its diagnosis, though suggestions will be in order in the consideration of its proper treatment.

Treatment.—Under this heading, I refer to all premature expulsions of the fructified ovule, or its threatened occurrence. Its consideration is usually divided into the treatment of threatening abortion, with a view to its prevention, and the proper management of a case in which expulsion is inevitable, or has already occurred.

To prevent a threatened abortion, I would place at the head of all agents absolute rest in bed. In the earlier months, before there is much shortening of the cervix, ergot has been, in my experience, the best medicinal agent. The fluid extract may be given in from 10 to 20-drop doses every three or four hours. In the later months, when the cervix is almost obliterated, and only manifest as a soft thick orifice, the ergot will almost certainly hasten the premature expulsion of the fetus. Next to ergot, the tincture of cimicifuga (5 drops every hour) is a useful agent, especially in allaying uterine irritability.

I prefer the conjoined use of rest in bed and ergot in all early cases. Vaginal tampons are, in my estimation, to be avoided if possible, as they occasionally cause the very thing they are employed to prevent. If, however, hemorrhage cannot be controlled in any other way, this means must be resorted to. Local work along the genital tract is essentially surgical, and upon a surface with its functions more or less perverted and, thus, ready for the absorption of poisonous material. On this account much is gained and nothing lost by antiseptic precautions, though these are often entirely unnecessary. To use them is, however, to be on the safe side. My favorite solution, as I have already stated under another heading, is a five per cent. solution of carbolic acid and glycerine in water. In my opinion, it is very advisable to always dip in this solution anything that is to pass into the uterine cavity, for experience has satisfied me that then one may rest assured that unlooked-for complications will not arise so often as when this precaution is neglected.

Opium, in sufficient amount to be effective, is a valuable

remedy to prevent threatened abortion, for its obtunds reflex excitability of the uterus, thus permitting this organ to recover itself and obviate the threatened disaster. I have also frequently found uterine irritability allayed by warm water injections into the vagina.

Ipecac is another drug very useful to control uterine hemorrhage. It may be given in one or two grain (emetic) doses at half-hourly intervals. It is surprisingly efficient in many cases.

Belladonna (fluid extract), or it and aconite (tincture), are often even more effective than ipecac, and should be used in two-drop doses each every one or two hours until effective, or until physiologic effects are produced.

If severe bleeding continues despite the use of the foregoing measures, abortion may be considered inevitable. This is all the more certain if accompanied by persistent pain of any kind. A fetid vaginal discharge almost inevitably presages certain abortion. Expulsion of the ovum must ensue if the amniotic sac is ruptured. A widely-dilated os is also a significant precursor of unpreventable abortion. These are general rules subject to occasional exceptions, except rupture of the sac.

When the abortion is inevitable, there is but one indication, and that is to thoroughly empty the uterus. This should be done promptly and aseptically. While nature will do this perfectly well most of the time if not interfered with, she sometimes does it as badly as it has so often been done by individuals. If there is no fever, if the patient is well, and if there is no serious hemorrhage, and by that I mean very little or none at all, the expulsion may be left to nature if the patient's general condition is normal. Should, however, any of these foregoing conditions exist, or should the patient, despite their absence, have pyrexia or a fast pulse, it is best to take no chances, for then it is time to remove the products of conception as speedily as possible. To this end it is first necessary to fully dilate the os or cervix. This is done by means of aseptic tents, and, if necessary, Barnes dilators or metallic divulsors. If time is precious, the patient may be anesthetized and subjected to rapid digital dilatation of the cervix, and removal of the uterine contents.

In rapid digital dilatation of the os in abortion cases, the index finger is passed into the cervix while the other hand presses the uterus well down toward the vulva from above the pubis. When the finger passes the internal os, it is bent forwards, and thus used to pull the uterus further down, as if with a hook. The organ is then held low down, while the

middle finger is gradually worked up through the cervical canal alongside the index. After both are well in, they are forcibly separated, thus acting as dilators and, at the same time, forcing the contracting uterus down upon the divergent fingers toward their adjoining bases. It is then that the finger tips reach the fundus, and are swept around to clear the uterine wall. If there is trouble in bringing the uterus down with the hooked finger and pressure from above, I usually grasp the cervical lip between the two fingers, one inside and the other outside, usually the posterior lip, with the index finger within the canal, and the tip of the bent medius clutching it from behind. If necessary, all four fingers and the palm must be introduced into the vagina. The entire process requires from only two or three to as much as twenty minutes, depending upon the resistance of the parts and the amount of fat present.

This latter plan is, to my mind, the preferable one, and much the quickest, besides causing the patient no pain whatever. After the removal of the products of conception, I always irrigate the uterus with the carbolic-acid solution as hot as it can be borne by the fingers, with which I hold the douche tube in the vagina. The point of the nozzle is moved about freely over all parts of the uterine wall, and the stream continued until it comes away clear.

Before the patient recovers from the effects of the anesthetic, I give a hypodermic injection of $\frac{1}{4}$ grain of morphine sulphate and 1-150 grain atropin sulphate, unless I have given it previous to the anesthesia. After this treatment, the patient usually requires no further attention whatever, and she should not be disturbed, even by examination, unless there is some indication for interference. I find in cases thus treated, that future visits are unnecessary except for their moral effect, most patients requiring for the same good reason some medicine, which, in the absence of any special indication, should be a harmless placebo.

It is important, however, that these patients set up several times a day for a few moments, say upon a commode or chamber, for the purpose of allowing accumulated uterine discharge a free outflow from the vagina. The mere sitting up can do no harm, though it may temporarily inconvenience the patient, especially if she is weak from loss of blood, or from other causes.

COMPLETE UTERINE INERTIA IN ABORTION.

It fell to my lot, several years ago, to attend a woman in miscarriage in the sixth month of pregnancy, who had com-

plete and persistent inertia uteri. She had four small living children, all single births, and had, in all, been pregnant five times within a little more than seven years. She was pale, thin, and delicate. The children were all strapping healthy boys. During her few years of married life, she had dropped from a fat, plump, rosy-cheeked maiden to a wornout, pale, and attenuated matron. When seen, the os was dilated, and the fetus presenting. There was no pain and no uterine contraction. The fetal head was grasped between two fingers at the entrance of the cervix, but all the traction that could be applied, without danger of pulling off the head, did not move the fetus, nor cause pain nor contraction. There was no bleeding. Ergot was given, and the patient was left alone. The condition was the same a few hours later, but the fetus was extracted by traction, and still no uterine contraction despite the liberal use of ergot. In consequence of the absence of fetor, of fever, and of pain or tenderness, the placenta was not disturbed. On the following day, there was marked hysteria, which continued, evidenced by hypochondriasis and repeated crying spells, and extraordinary nervousness. These attacks were much modified by the tincture of *cimicifuga* in half-dram doses every four or five hours. On the second day fetor and fever set in. She was then given chloroform, the cervix was rapidly dilated with the fingers, fetid secundines removed, and the uterine cavity irrigated with a hot 5 per cent carbolic-acid solution. Still the uterus was flaccid, and it remained so, though the patient made a gradual and uninterrupted recovery under the use of *nuxvomica*, *cimicifuga*, and country air.

She was careful to avoid re-impregnation, and regained her former plumpness, color, and good health.

ON "A SAFE METHOD OF INDUCING ABORTION."

This is a common heading nowadays for numerous articles, or similar headings having the same significance. They all imply both a demand for this kind of information and a belief that it is to be had. And just here is where we should sound a note of warning. A pregnant uterus cannot be made to give up its contents prematurely without danger. Nature, to be figurative, generally penalizes attempts to thwart her intentions. This is so evident that it seems needless to prove the assertion.

The glycerine injection method was the "safest" to use until it slew several victims, just as other "safe" methods had done before, and as others have done since, and will continue to do in the future. A common method, and probably as

safe (?) as any, is the introduction into the body of the uterus of an aseptic foreign body, which excites uterine contraction to enforce its expulsion, the accomplishment of this end being accompanied by the elimination of the entire uterine contents. Gauze may be used for this purpose, or a soft rubber catheter, or any other material. Gauze is difficult to place without ample dilatation, though the recent introduction of tubular gauze-carriers has much simplified this part of the work, and yet it is still not as easy as the introduction of the soft rubber catheter, which is readily passed in place with much less pain. Hence its more frequent use by women themselves.

Some time ago, it was my privilege to see something unusual following the passage of a very flexible soft rubber catheter into a two months' pregnant uterus. It was self-introduced by a woman who had had previous similar experiences. She came to me to have it removed on the ground that it was not bringing on the hoped-for abortion, but that it was projecting through the neck of the cervix. I could not find it, and did not explore the uterus, for self-evident reasons. She was told to call again, or send at once if it reappeared. This soon happened, and I actually found the square end of the catheter, that which passed into the uterus last, projecting more than an inch from the left cervical wall near the vaginal junction. It was drawn out, no treatment was given, and she aborted without much further ado, and made an excellent recovery.

She was a lucky woman to accomplish her purpose and make so perfect and easy a recovery after such an occurrence. If the square end of a catheter can work its way, within two or three days, through the dense structure of the cervix, it may do likewise through the corpus uteri into the abdominal cavity, with probably fatal result. The man who risks his standing and liberty, his entire prospects of professional success, upon so erratic, so treacherous, a contingency, is indeed a desperate or a foolish one. The game is never worth the candle, and much less of it would be attempted if men looked upon it as much from the common-sense material standpoint as the moral and sentimental. The man whose only drawback is, "It is wrong to do it," will, nevertheless, often yield, whereas, he would never be tempted to do so did his mind also add, "I'd be a fool to do it."

INDUCED ABORTION AND THE PHYSICIAN'S RELATION THERE TO.

Dr. Henry T. Byford¹ makes some remarks upon this subject that are refreshingly virile, honest, and common sense,

¹ *Western Medical Review* of July 15, 1890.

though evidently guarded. A disheartening lack of frankness and of moral courage is the main characteristic of nearly all expressions upon this subject. Even in private conversation, the average doctor is apt to be very much upon his guard when asked for his views upon these matters.

Then there are the numerous hypocrites and dissemblers. I know of one who wrote a most scathing denunciation against the enormity of the "unnatural crime of abortion," and yet contrived to largely augment his yearly income by the practice he so strenuously denounced. He is one of a type that is more numerous than is generally supposed.

But to return to Dr. Byford: He is unquestionably opposed to the induction of abortion for convenience, and by this I mean, for instance, the doing of it for married women so that they may avoid the cares of maternity. But he very properly points out that there is a difference between a case of that kind and one of an unfortunate single woman whose shame would entail much agony upon herself, her many kinsmen, and upon the child she bore. He simply says that one feels this difference after turning away one of these unfortunates. And every one of us with a heart, with a sense of justice, with a conscience, has felt the difference under similar conditions. Dr. Byford makes no suggestion, nor do I care to do so, and probably for the same reason—the fact that the time does not seem ripe. Upon this subject one must be cautious—and the greater the shame. He does suggest an institution where these unfortunates may be housed and screened until entirely over their trouble, and he points out the deplorable fact that many institutions decline to receive labor cases involving illegitimate births.

Now what are these women to do? A number of them commit suicide every month in our large cities; some kill their offspring as soon as born; others send them out to death-dealing private nurseries abounding in filth, and conducted with the grossest carelessness, there to die; while still others have their children grow up to maturity, and, while some of these may become useful members of the community, most of them, probably, become criminal, pauper, or insane charges upon the public. A large percentage of these unfortunate women, because of their first disgrace, drift into a disreputable life, and others into prostitution. The same logic that takes the life of a man or woman of previously unblemished character because of the perpetration of a single crime, not only ignores the tremendous effects of permitting an embryo to mature into not only a full-grown child, but the seed of incal-

culable mischief and inconceivable suffering, both as to intensity and the number of individuals involved, not to say anything about the probable future financial cost to the community—not only, do I say, does the logic of the law overlook these facts, but it imposes the gravest penalties upon those who arrest the course of a highly probable evil.

In saying this, I fully appreciate the dangers of permitting physicians to use any discretion in matters of this kind other than those already vested in them, to wit: the question of life and death of the mother. But the question naturally arises, what is the value of an embryo to the community as compared with that of an adult? One is a certainty, the other an unknown quantity. A child born in wedlock, of healthy parents, is likely to become a useful member of society. One born to a husbandless, and utterly disgraced and degraded, mother is likely to die, or to become a public charge if it lives, and is least of all apt to become a useful citizen. Often, too, the prospective mother seeks effacement of her inevitable shame and mortification in suicide, thus sacrificing two lives instead of one.

It seems to me that we should, as intelligent beings, be able to differentiate between the relative merits of these cases so as to decide whether there was danger of damage to the community in the various ways suggested, or whether the probable injury would likely be so slight as to be counter-balanced by the probability of an issue that would receive proper care from its own mother, and have family standing, thus insuring the greatest likelihood of future usefulness.

The proper tribunal for the decision of such cases should be the one that decides other cases of life and death, or one similar to it. The settlement of these questions should be a judicial one, and ought to be relegated to those specially qualified in the hearing and deciding of questions of law and of public policy. When new questions arise before courts of law, mainly because of changed conditions, bringing up questions without precedent, and covered neither by statute nor the common law, judges must decide *de novo* from the broad standpoint of what is known as public policy. The rapid development of our civilization on entirely new lines during the past few generations has caused the origin of many new questions at law. When a people's condition and needs outgrow their law, constitutional, or other, conventions are held for the purpose of amending the rules under which they live, so as to harmonize with the changed conditions that had not been foreseen generations before. Similar methods may be requisite in

the future, if the time is not now ripe for such a step, to settle this question of the destruction of embryonic life for other and broader reasons than the single safeguarding of the life of the prospective mother. Not, of course, by a constitutional convention or similar august body, but by the appointment of a legislative commission to hear argument upon all sides of the question with a view to safeguarding, not only the lives of women, as is already provided for, but for sociologic and economic purposes that now receive no consideration whatever. If it is right, and who can doubt it, to sacrifice the life of the very flower of a community's manhood for the preservation of its institutions, or for the upholding of its pride—or its "honor," why not the sacrifice of an embryo under certain conditions to subserve the public weal?

Chapter XIII.

PELVIC INFLAMMATIONS.

PELVIC CELLULITIS.

Recognition.—Pelvic cellulitis consists in an inflammation of the connective tissue about the uterus and between the folds of the broad ligaments. It generally begins with a chill, followed by active fever. Micturition becomes painful, and blood flows from the uterus. But chills and fever may also be absent. Examination *per vaginam* reveals great sensitiveness, usually limited to one side of the uterus. Soon a lump begins to form, increasing in size, and firmly fixing the uterus. When fixation is well established, defecation becomes difficult and painful, particularly if the feces come down in hard lumps, for the swollen mass of proliferated connective tissue, and coagulated inflammatory lymph, are compressed by the descent of the fecal lumps, and in turn compress the ovaries and the nerves that ramify in the affected territory. The pain is throbbing, and there is a feeling of heat and weight in the pelvis. As the case progresses, the hardened mass softens, and is either absorbed or it breaks down into pus, thus forming a pelvic abscess, which may be detected by fluctuation, and its size ascertained by bimanual examination.

Sometimes the exudation is peculiar, giving rise to doubt in the mind of the examiner. Thus I had a patient with a pelvic cellulitis and peritonitis with an effusion that bulged into the rectum as an irregular cauliflower-surfaced mass as hard as a scirrhus cancer, for which I mistook it for several days. The sacral ache was very severe, as were also all attempts at defecation. Subsidence of the swelling satisfied me of its true character, which its final complete disappearance proved it to have been.

Treatment.—This ailment is sufficiently common, especially in these days of auto-abortion, or attempts at it, to make it advisable for every practitioner to be on guard against its recurrence, and to know how, at once, to begin its treatment. The indications are rest, the alleviation of pain, reduction of inflammation, and the induction of resolution. The patient must be put to bed, and kept there in whatever position she

finds most comfortable. Pain is best relieved by means of opium, either by the mouth, anus, or skin, as seems most advisable in each instance. In very acute cases, it is best to get the suffering under control with the hypodermic syringe, after which the anodyne may be given by the mouth in necessary quantity and frequency. When the stomach does not absorb, as is often the case, a suppository may be used (opium gr. 1, ext. belladonna gr. $\frac{1}{4}$), but if greater promptness is desired, the same substances may be given in solution as an enema. If the hypodermic method is employed, the physician should remain with his patient till the desired effect is produced, for the double object of giving prompt relief and avoiding the likelihood of a call in haste a little later to give another injection, because the first was inadequate. I usually inject deeply into the substance of the triceps or deltoid muscles, or over the seat of greatest pain, and I never have any local trouble. There are other pain-relieving agents, but none seem to me to have so beneficial an influence upon the course of the disease as has opium or morphine, and this is the general experience.

To reduce local inflammation, it is advisable to apply sinapisms over the hypogastrium, followed by hot flaxseed poultices, or satisfactory substitutes. One of the best of them is the clay-glycerine compound, which is smeared all over the hypogastrium fully one-quarter inch thick. No surprise should be felt if the patient complains of a severe drawing feeling, "clear to my backbone." This is only in line with what is wanted, and indicates its effectiveness. Ten grains of quinine may be given at once, followed by five-grain doses, at five-hour intervals, until active trouble has subsided. Cinchonism at the time for taking a dose is a contra-indication to its use until this effect has disappeared.

I know of no better remedy for the prevention of suppuration in these cases than the sulphide of calcium, of which one-half grain may be given at once, to be followed by one-tenth grain doses every hour for days. In full doses, it causes nausea, upon the appearance of which its use must be discontinued until this symptom is gone, when its readministration is begun in smaller amounts, or at longer intervals.

Hydrogogue cathartics are very useful in this condition, for the double purpose of causing easily-voided stools and their depletory action. The salines are very good, and so is elaterium, for this purpose.

In regard to feeding, it is my uniform practice, in all acute cases, to withhold food until it is craved. I have found this plan much the best one. In these cases the gastro-enteric func-

tions are, for a time, suspended, and if there ever is a chance for auto-infection from this region, it is when it is incapable of performing its ordinary duty. I really believe that many enteric infections are caused by overfeeding, not alone in acute pelvic cellulitis, but in most acute disorders, and even in health. As soon as there are several copious stools, and after pain is controlled, a desire for food begins to return. It is then that I begin to feed, usually letting the cravings of my patient be my guide, rather than any fixed dietetic formulary, for people are not all made over any one pattern. Every case should be individualized, and treated according to personal peculiarities. The troublesome thirst encountered during the febrile stage, I usually assuage by means of dilute lemonade, or lime juice, by succulent fruits (as oranges), and by cold buttermilk, all of which favor enteric secretion. When, because of general asthenia, feeding is indicated during the fever, I order ice-cream. This has been my practice for the past twenty years in febrile cases generally, and always with the happiest results.

Should the pelvic exudate break down and form an abscess, the aspirator may be used *per vaginam* for diagnostic purposes. The treatment, then, is to aspirate the cavity, and wash it out aseptically by reversing the action of the aspirator. If the formation of pus continues, it is necessary to freely incise the wall of the cavity through the vagina, after which it should be aseptically washed out and packed with aseptic gauze. This treatment is to be repeated at daily intervals until the cavity is healed.

So long as there are any recent remains of the exudate, the patient should be very limited in her exertions, so as to avoid even more serious chronic, and less readily remedied, sequelæ.

THE OPENING OF PELVIC ABSCESES.

While it does not occur very often that the general practitioner is required to open a pelvic abscess, it is a procedure fraught with danger if not done right. Important nerves and vessels may be severed, or the peritoneal cavity may be entered—all extremely undesirable mishaps. In fact, the opening of deep abscesses, especially in the midst of many important surrounding structures, is everywhere beset with danger. Whoever devises a simpler and safer method of doing this is, indeed, a benefactor of his race.

It was in the early sixties that Hilton announced his method of opening pharyngeal or deep-neck abscesses in a manner that was sure, safe, and efficient, during the delivery of his Croonian lectures in London. His procedure consisted in

an incision of the skin as near the abscess-site as possible, after which a grooved director was pushed through the intervening connective tissue, and between all the surrounding important structures, to and through the abscess-wall. A small closed forceps was then pushed into the cavity along the groove of the director, to be withdrawn opened, thus enlarging the track to the abscess by tearing the connective tissue and pushing aside all the important structures without doing damage to any. What Hilton did for deep abscesses of the neck, Henrotin has done for those of the female pelvis.

The Henrotin method consists in incising the vaginal mucous membrane along the median line close to the uterus, either in front or behind, according to the location of the pus collection to be reached. After the incision, progress is made with a blunt instrument, or the finger-tip, through the connective tissue, keeping close to the uterus along the median line until the cervix is passed, after which, the cavity not yet having been opened, progress is made in a direct line toward the affected area.

The sides of the uterus are avoided on account of the vessels and nerves. The cavity is entered as by the Hilton method, and the canal is also enlarged by tearing or by incision in the median line, but care must be exercised not to cut the bladder or rectum.

Cavities of this kind should always be washed out and subsequently drained. If the opening is large, a tube of corresponding size may be used, and through this there will be an ample flow either way in irrigation, but, if the opening is small, a return-flow instrument should be used; in fact, many prefer to use them thus at all times. It is, then, best to run the inflow-tube to the distant side of the cavity, while the outflow-tube passes only a little way in. Both may be tied together to insure their retention in their relative positions.

Abscesses, attended to in the manner described, are not nearly so apt to endanger the health or life of the patient as they are if left to nature, or to all other chances of a free incision.

PELVIC CELLULITIS AND TYPHOID FEVER.

The general prevalence of typhoid fever in this city suggests a source of error in diagnosis that I have several times witnessed, and to which I think it well to call attention. It is the ease with which some cases of pelvic cellulitis may be mistaken for typhoid fever. Not long ago I was called to see a case that had been diagnosed as typhoid by an attending physician who had died during the illness of his patient. She

had not the typic history of typhoid, just as many genuine cases have not, but she had been ill in bed with a low fever, hypogastric pain, especially upon the right side, and diarrhea with painful stools. Her tongue was heavily coated, and her lips were dry and cracked. Her cheeks were sunken and pallid, and her pulse was small and weak.

She happened to be a patient I had seen before, and known to have right ovarian trouble. An examination *per vaginam* was suggested and readily assented to. Her pelvic roof was firmly fixed, as was also her uterus, by an extensive exudate that filled her pelvis. A blood test was made and it negatived the diagnosis of typhoid, and thus doubly verified mine of uncomplicated pelvic cellulitis. In due time she made a good recovery.

Had her first physician made a vaginal examination, he would, in all probability, not have erred as he did. But there are many men who regularly neglect such an examination, either as too troublesome, through diffidence, or because they feel unable to satisfy themselves of the true conditions despite an examination. They should either properly qualify themselves, or call in a competent consultant. True, such a mistake in diagnosis is not apt to injure the patient, but it is nevertheless objectionable for many reasons that do not require enumeration.

PELVIC PERITONITIS.

Recognition.—Pelvic peritonitis is recognized by the sharp pains, exquisite sensitiveness, fever, pulse, nausea, and vomiting of abdominal peritonitis, together with the anxious face, tympanites, and mental disturbance also characteristic of this affection. Besides this, there is great pelvic tenderness *per vaginam*, fixation of the uterus, and pain attending micturition and defecation. Tumefaction of the periuterine connective tissue is wanting. Later on, effused lymph is found in the pouch of Douglass, and this subsequently becomes quite firm.

Treatment.—This condition, so allied to the preceding, is more painful, and hence requires the more liberal use of anodynes, enough being given, under all circumstances, to yield relief. It must not be forgotten that opium is wonderfully tolerated when it is needed. The general treatment is the same as for cellulitis. Should, however, plastic exudation cause adhesions of the pelvic viscera, or of the intestines, abdominal section is usually indicated. In fact, this procedure is always advisable if there is no satisfactory response

to medication. A section that is done under perfect cleanliness is not dangerous, while helpless medication usually condemns the sufferer to a premature grave or chronic invalidism. The separation of adhesions, the removal of all exudate, and the careful aseptic washing out of the lower abdomen and pelvis, usually insure a prompt and complete cure, whereas medicinal treatment that yields no response, if it does not let the patient die, at all events often condemns her to a chronic invalidism that is worse than death, or to a subsequent operation much more dangerous to life, and less promising of complete relief, for the reasons that the damage is then greater and less remediable on account of its chronicity, and the weakened state of the patient from long suffering.

I purposely refrain from naming any special method of section, for the simple reason that the method is not nearly so important as is the necessity, under these circumstances, of doing some kind of a section. There are so-called "leading men," or surgeons if you please, in all localities, who determine, for the time being, the popular mode of procedure. I believe it good advice to say that the prevailing method is the one that had better be adopted by those who have done little or no work of this kind, for adverse criticism and censure are thereby lessened in the event of an unfavorable termination. Men who pose as "operators" do not view lightly attempts of ordinary practitioners to do their own surgical work, however much they may be qualified. Witness the feeling against McDowell and Battey as instances. If the great surgeon, Dr. —, is your jealous opponent, he is greatly disarmed if you have operated by the same method he employs. If there are two or more such specialists, they generally employ different procedures. In that case select that of the best man, and he will aid you against the others, if necessary, but if you adopt some plan used by neither, the whole pack may pounce upon and seek to destroy you at the first opportunity. These are facts, and sad facts, too, but they are there, and it behooves wise men to conduct themselves accordingly.

A fact well known for many years, is that the peritoneal absorbing capacity is greatest near the diaphragm and poorest in the pelvis. Dr. Geo. R. Fowler, of Brooklyn, N. Y., has demonstrated the utility of this fact by keeping the beds of pelvic peritonitis patients raised at least a foot at the head, thus preventing pelvic effusions from rising into the belly and infecting it higher up. While his cases were surgical ones, there is no reason to doubt that this method has its use in non-surgical cases.

SUDDEN SUPPURATIVE PERITONITIS.

A young married couple employed me as their general medical adviser from the time of their union. The wife had several abortions produced by drugs which the husband had put up in large capsules on an old formula, despite my urgent counsel against it. She had signs of a pelvic cellulitis after one of these, but was too stoical to let me see her more than three times, after which she got along as well as she could. Subsequently her husband died of tubercular meningitis secondary to a tubercular joint trouble, of two years' standing, at the base of his left great toe, which, in turn, succeeded a former chronic cough with several attacks of hemoptysis, which he had had several years before that. I may add that he had repeatedly refused operation upon the foot although he had been frequently warned of the danger of procrastination.

About one year after his death, I was called on a Monday, at about 5 P. M., to see his widow, and I saw her an hour later. She had been up country the preceding two days, and rode her wheel part of the time. She complained of belly soreness and diarrhea. The weather was very hot, and she attributed her trouble to over-exertion and being over-heated. Her temperature was 101° F., and her pulse 100 and very fair. I gave her an anodyne, astringent, and antiseptic tablet, and ten 3-grain tablets of acetanilid for fever, to be taken at half-hour intervals as needed.

As I was to be in New York on the following day, I asked my friend, Dr. Joseph I. Smith, to see her for me. This he did, and found her better in all ways, with normal temperature, except some slight bluishness of the lips and finger-tips, for which he gave appropriate remedies. She had only taken five or six of the acetanilid tablets. Upon my return (Tuesday) at 6.30 P. M., I found a call awaiting me since 3 P. M., to see her as soon as possible. Being busy in my office, I was obliged to wait. But her sister came meanwhile, asking that I come at once. This I did, only to find her dead in bed, with chin already tied up, and eyes closed with weights. Her abdomen was tensely distended with gas, and they told me that she became delirious, and suffered much pain, after 3 P. M. that day.

The only inference was that she died from acute diffuse peritonitis. I made a post-mortem examination upon the following day. There were present Drs. Joseph I. Smith and Frederick W. Steinbock. There was found a well-advanced diffuse purulent peritonitis. Its probable cause was an old

abscess-cavity in the left broad ligament. It was about the size of a large English walnut, had a thick pyogenic membrane, and contained extremely fetid greenish pus. I presume this to have been the infecting focus.

This case illustrates the remote dangers of old pus collections in general, and of pelvic cellulitis in particular.

An interesting case of diffuse suppurative peritonitis, ending in still more sudden death, was reported by Dr. Geo. R. Westbrook to the Brooklyn Pathological Society on November 12, 1885, and can be found on page 51 of the Society's Transactions for that year. She was a married woman of 40, and had seen him twice in his office, complaining of symptoms suggesting a chronic gastritis.

Four days after her last visit to him, her friends say, she complained of severe pain and cramps in the abdomen, was very restless, would not lie on her bed, vomited blood, and finally got on her knees on the floor, resting her abdomen across a low chair, and died in that position, about four hours after she first complained of pain and cramps. No physician had been called. She had been out shopping on the day of her death, and only complained of pain upon her return.

Dr. Westbrook made the autopsy, assisted by Dr. R. G. Eccles and myself. There was found a perforation on the anterior aspect of the stomach near the pyloric end. There was an intense general peritonitis, the parietal and visceral layers of the peritoneum being intensely injected, and covered with recent exudate.

I could cite other cases, but these suffice to show how virulent an attack of peritonitis may supervene in a short time without a suspicion of its presence until too late to render any aid likely to save life.

SALPINGITIS.

Recognition.—This is an inflammation of the Fallopian tubes, and is interesting because sterility may result, if both are affected, or they may become distended with pus or serum, or they may cause ovarian or peritoneal inflammation. This trouble usually results from an extension of intra-uterine inflammation, notably gonorrheal and puerperal cases. The uterine orifice of the affected tube is often open, and admits the probe for a couple of inches, thus sometimes causing the examiner to think the uterus is enlarged. If the uterine end closes, the tube may become distended with pus, thus constituting pyo-salpinx; and if the process is chronic, the accumulation is serous, and the condition then known as hydro-

salpinx. The tubes are readily detected, when distended, because they drop down, and are distinguished from abscesses and other liquid collections by their mobility. More or less of the tubal contents frequently get into the uterus, and flow out through the vagina. If examined microscopically, its ciliated epithelium from the Fallopian tubes will be observed, thus making diagnosis positive. When none exudes, it may be removed by aspiration for diagnosis.

Treatment.—Acute cases should be placed in bed, and kept as quiet as possible. Pain is to be relieved by suitable doses of opium, preferably in the form of suppositories containing 1 gr. of opium and $\frac{1}{4}$ gr. of extract of belladonna each. Counter-irritation, such as sinapisms, blisters, hot applications, and dry cupping, are very desirable, as also is local bloodletting, either by means of leeches or wet cups applied in the iliac regions. A splendid local application consists of the compound of clay and glycerine now put upon the market by several firms, but under fanciful names. The bowels should be kept freely open by means of salines in moderate doses, thus aiding in local depletion.

Medicinally, cimicifuga is to be given in the usual way already described. Sulphide of calcium should be used in 1-10 gr. doses every hour, or until there is slight nausea, after which it is discontinued until the sick stomach disappears, when it is again continued at longer intervals. Hot antiseptic vaginal injections are useful, and should be practiced about three times daily. Other symptoms are treated in the usual manner as they arise.

In chronic cases, it is always safe to dilate the cervix and thoroughly curette the cavity of the uterus. This practice has been very effective many times. By its means the occluded uterine orifice of the affected tube is often again opened so that the tubal contents find a ready exit, and the patient the desired relief. Consistent with this view, therefore, it is very essential that the curetting be especially thorough in both lateral angles of the cavity of the body of the uterus, where the tubes enter. Curetting should always be followed with an aseptic intra-uterine douche, care being observed to preserve a channel for the ready egress of injected fluid, for otherwise it might enter and distend the tube, or cause uterine colic. If satisfied, by the resistance of the enlarged tube, that there is no danger of its rupture, gentle massage is very beneficial if practiced at frequent intervals, and for a long time, say several months. Should all means fail, after careful treatment over a period of from six to twelve months, the abdomen had better be opened,

and the patient relieved in one of two ways. The first consists in breaking up all adhesions between the uterus and its appendages and surrounding parts, besides a search for similar unions among the abdominal viscera, and like treatment of them. This has, in many cases, been sufficient to give complete relief. Another way is to remove the affected tube, care being exercised to avoid its rupture during removal so that pus may not be extruded into the peritoneal cavity, and should this occur, then must the belly be thoroughly washed out with an antiseptic liquid.

Oozing is readily stopped by compression with gauze. Whether the abdominal wound is to be sewed up or left open depends upon the judgment of the operator as to whether the severed surfaces will heal with very little suppuration or not. But it is perfectly safe and feasible to leave the entire wound open, and dress it daily with sterilized gauze, which should be packed into the wound at each sitting after the old has been taken out, and the parts have been irrigated. In suturing the belly wound, the main care is to unite the serous (peritoneal) surfaces, not edge to edge, but face to face. Separate sutures should draw together the musculo-aponeurotic mass, for which purpose the stitches must pass well back from the edge, so as to get a good hold. Then, finally, the skin, is brought together, edge to edge. An antiseptic, say iodoform or iodol, gauze dressing is laid over this, and an abdominal bandage applied over all.

COC CYGODYNIA.

Recognition.—Coccygodynia is characterized by unbearable pain in the vicinity of the coccyx, aggravated by any act or position that moves the bone, or presses upon it. Examination reveals marked tenderness.

Treatment.—When coccygodynia is due to disease of the uterus or its adnexa, treatment should be directed to this, when, possibly, the neuralgic affection will disappear without direct attention. Thus, it may be caused by retro-flexion or version of the uterus. It may be due to a local neuritis, in which case aconite (gr. 1-100 of Duquesnel's crystals every four or five hours) may be given, either long enough to cause subsidence of symptoms, and cure, or until there is slight tingling in the terminal nerve filaments, when it should be discontinued until the tingling subsides. Other neuralgic remedies, such as Dr. Kenyon's tablets, may be employed. Hypodermic injections of 5 per cent. carbolic-acid solution may give temporary or permanent relief. So may the simple insertion

of a needle (acupuncture) in hysteric cases. Faradism has also yielded good results. It is given daily with one pole over the coccyx and the other upon the sacrum, and should be increased in strength at each successive application, the secondary coil of long fine wire being used. The effect is heightened by adding the mild galvanic at the same time, the positive pole at the seat of trouble.

When of long standing, and especially if due to neuritis or to affection of the bone or surrounding fibrous structures, a mild galvanic current, passed directly through the affected parts, gives relief or effects a cure in a proportion of cases. One electrode is placed in the rectum and upon the front of the coccyx, while the other rests upon the back of the bone. The current may be alternated for a time, and the entire application need not exceed ten minutes.

Should all these means fail, there remains the final remedy of excision of the coccyx. On account of the superficial situation of the bone, the operation is a very simple one. An incision is made vertically over the bone through its periosteum, which is scraped back and the bone enucleated, care being exercised during this process to cut close to the bone all around its edge, and not too deep in severing muscular and fibrous connections, and in detaching it from the sacrum. The wound is then closed, and a compress dressing applied. The bowels should be freely moved preceding the operation, and not moved again for four or five days, and then by means of an enema, the patient having meanwhile subsisted upon food that leaves a minimum residuum.

These cases occur mostly in women who have borne children, though not limited to them. There are, though, a few reported cases of parturition causing direct injury of the coccyx without resulting coccygodynia.

Chapter XIV.

UTERINE DISPLACEMENTS.

Recognition.—The uterus may fall forward or backward, or it may descend. Displacements of the entire uterus without regard to its own axis are called versions—anteversion if it is tilted forward, and retroversion if backward—while it is known as prolapsus if it has descended ("fallen"). It is also, at times, tilted sideways, when it is called latero-version. Sometimes it rises because of enlargement, as in pregnancy, or because pushed or drawn up by tumors.

If bent upon its own axis, it is called flexion, the terms being ante-, retro-, and latero-flexion, according as it is bent forward, backward, or sideways. The cervix may be bent upon the body of the uterus (oftenest forward). Flexions and versions may coexist, and may even then be associated with prolapsus if the perineum is torn or extremely flaccid, and more especially if the pelvic structures and the abdominal muscles are relaxed and are wanting in tone.

These tiltings (versions) and bendings (flexions) and falling (prolapsus) of the uterus may be caused: 1st, by increased weight, due either to congestion, subinvolution, pregnancy, tumors, retained fluid, and other extraneous or pathologic contents; 2d, by defective supports, such as relaxed vaginal or abdominal walls, perineal laceration, too large a pelvis, uterine atony or degeneration, and elongation of ligaments; 3d, by downward pressure of tight or heavy clothing, undue contraction of the abdominal muscles, or their undue relaxation, abdominal tumors or dropsy, intra-pelvic accumulations and tumors, and an over-distended bladder; and 4th, downward traction by recto-vesical and vaginal prolapse, shortness of the vagina or uterine ligaments, and contracting vaginal cicatrices.

Treatment.—Malpositions of this organ require, first of all, the removal of their cause. In the second place, it is very important to build up the tone of the abdominal muscles so that they may help sustain the pelvic contents, especially in prolapsus. Local tone must be increased by cleanliness and improved circulation. Bad habits must be corrected, and the bowels should be regulated so that there is at least one easy

daily stool. Do not forget that a serious malposition is, with certainty, a local affection, however much it may be aggravated by general conditions. Local mechanic measures are then the proper means of relief, and these consist of tampons, pessaries, and operations, as occasion may require. And while many able practitioners condemn pessaries without qualification, many others cling to them with a tenacity born of long and satisfactory experience. Much of this difference of opinion, I believe, is the result of varying mechanic ability among those who do not agree. I have accomplished much good with pessaries, and I have seen them do mischief; but upon this subject I shall have something more in detail to say further on.

PROLAPSUS UTERI

Is readily recognized by the proximity of the cervix to the vulva, or even emergence therefrom.

Treatment.—Falling of the womb is commonly due to perineal laceration, the proper treatment then being a perineorrhaphy. Or it may result from intra-pelvic atony, with or without general atony; or it may be associated with weak abdominal walls, often due to, or aggravated by, corsets. General conditions require appropriate tonic treatment, in which the valuable tincture of *cimicifuga* must not be overlooked. If due to excessive coitus, or sexual congress with too large a male member, the intermissions must be lengthened, or the act should be entirely interdicted for a long enough time to permit restoration of intra-pelvic tone. Meanwhile the uterus must be supported by mechanic means, such as a hollow rubber or glass ball, a flexible soft rubber ring, or tampons. Hydrastine should be given in venous congestions in $\frac{1}{6}$ gr. doses every four hours, or as needed.

UTERINE VERSIONS AND FLEXIONS.

Recognition.—Uterine versions and flexions are recognized by bimanual manipulation and the use of the probe, though the bimanual method is impracticable in very stout women. To the educated touch, it is possible, most of the time, to differentiate between flexion and version, and the directions of displacement by simple digital vaginal examination. The axis of the uterus, it is well to recollect, is substantially at right angles to the plane of the external os. If, therefore, the os look backward, the fundus should incline forward if there is no flexion. Careful pressure against the os, and gauging of the direction of resistance, tells whether it is in the direction of the pressure or not. If not, the uterus is most likely bent

in the direction of the resistance. In flexions of the body, it is felt projecting above the cervix (anteriorly in antiflexion, and posteriorly in retroflexion) as a firm mass, which, when pushed in any direction, is followed by the cervix, the two always maintaining their relative positions. A subperitoneal, or bulging interstitial, fibroid might have the same sign, but the use of the speculum and probe readily reveals the direction of the canal. If the probe does not readily enter, it should be patiently tried in various ways by changing its curve. If all efforts fail, the cervical canal must be dilated step by step until the internal os is passed. In thin women the entire uterus is so readily outlined that simple flexions may be positively diagnosed by bimanual examination, and in these instances the probe should not be used.

It is imperatively necessary to a clear diagnosis that the entire uterus be outlined bimanually, or its size estimated by vaginal touch. Otherwise uterine growths, as, for instance, a fibroid, might escape notice.

An anteverted uterus, especially if enlarged or in case of small pelvis, rests upon the bladder, and causes a sense of fullness in this viscus with small accumulations of urine, thus leading to frequent micturition. A retroverted uterus may so impinge against the rectum as to interfere with the descent of feces, thus causing troublesome and persistent constipation, while, at the same time, the cervix may press upon the base of the bladder, causing vesical irritation with associated symptoms.

In anteversions, the os uteri is directed well backward, while in retroversions it faces directly forward, in extreme cases even forward and upward.

UTERINE VERSIONS.

Treatment.—When recent, they simply require the support of a suitable hard or soft rubber pessary for a short time, say from a couple of weeks to several months. When of long standing, the support must be worn for a longer period. It should, in such cases, be occasionally removed for several days at a time. Sometimes it may be replaced by successively smaller ones, notably if the vagina was originally very large, so as to require a full-sized support. If the organ is bound down by adhesions, the pessary is likely to cause irritation because of resulting pressure due to tension upon the adhering bands. It is then that more good results from reposition with an Elliott repository, followed by the placing of a few tampons about the cervix so that they will tend to coax the organ

toward its natural position. The frequency with which forcible reposition is to be practiced with the replacer depends upon the sensitiveness of the endometrium. A second attempt had better not be made until the effects of the first have worn off, and this may vary from a few days to as many weeks. And it may not be out of place to say right here, that it is much more satisfactory to physician and patient that every instrument entering the uterine cavity be dipped in an antiseptic solution every time preceding its passage into the uterus. I prefer a 10 to 15 per cent. carbolic-acid solution, the acid being first mixed with at least its own quantity of glycerine to insure even solution.

Though many object to it, and I think more from fanciful than real reasons, local massage seems to me a most excellent remedy for dissipating congestions and breaking up adhesions, or, at least, lengthening adhesion bands; but it must be practiced gently and painlessly.

UTERINE FLEXIONS

May cause recto-vesical disturbance in varying degrees, but are apt to cause most trouble from obstructed menstrual flow, sterility, leucorrhea, and salpingitis.

Treatment.—These cases are usually treated, without much trouble, so as to give entire satisfaction. They are generally associated with many other secondary affections that gradually yield, after restoration, to the restored normal uterine axis and patulousness of the cervical canal. My practice is to enter the uterine cavity with an Elliott replacer, pushing this to the fundus and then withdrawing it, say about one-quarter inch or a little more, so as to avoid injury to the fundus during the forcible straightening of the canal that immediately follows. The rapidity with which the curve of the replacer is reversed depends upon the nature of the trouble. The procedure admits of rapidity of execution in proportion to the readiness with which restoration is made. It should cause but slight pain, or none at all. If pain is marked, progress must be slow and gradual. It may even be necessary to only partly reverse the uterine axis at one sitting, leaving the balance of the work to one or more succeeding ones.

Should there be difficulty in introducing the replacer, it will be necessary to first dilate the canal, though this is seldom required if the replacer is properly manipulated. Its end should be introduced into the cervical canal at a slight curve, and then pushed forward. The curve is then gradually increased by means of the thumb-screw so as to follow the course of the

canal, which may be, and often is, so bent that a similarly curved instrument could not be made to enter the os through a speculum.

After reversion of the flexion, it should be held so for a few minutes, say five, after which the replacer is withdrawn and the dilator inserted. The replacer should not be withdrawn as much curved as it is during these five minutes in the uterus, but the curve should be sufficiently lessened to permit easy removal.

The entire canal is then gradually dilated, bilaterally and antero-posteriorly, to at least half the extent of the instrument. A single treatment of this kind will alone relieve dysmenorrhea dependent upon flexion, for several months. But to insure permanent results, I almost always insert my flexible intra-uterine stem pessary, which may remain for a year or more without interfering with menstruation or causing any trouble. Other supports are of little use except for the relief of coincident version, or when the intra-uterine stem is not used.

I should qualify this statement concerning my intra-uterine stem by the proviso, while there is no ensuing infection of the endometrium, but should this, nevertheless, occur, its immediate removal and thorough disinfection, together with a like treatment of the endometrium, is the only proper remedy, and it should be promptly applied. For additional information concerning the use of this support, reference should be had to the chapter specially devoted to its consideration.

LATERAL VERSIONS AND FLEXIONS.

Recognition.—Lateral versions and flexions are not as common as the antero-posterior varieties, and cause less trouble, though sometimes damaging to ovarian integrity because of traction or pressure. Like the other displacements, it is detected bimanually and with the probe.

It is well to bear in mind that if the finger rests against the external os of the normally situated uterus, maximum resistance is felt when pressure is made toward the umbilicus, *i. e.*, the axis of the superior pelvic strait, being slightly modified by the recumbent and erect positions.

I purposely refrain from listing the usual symptoms of displacements because a physical examination is sufficient for diagnosis, while all the symptoms alone that could be gathered will not justify a positive conclusion as to their cause. Either a double or single-horned uterus might be mistaken for a lateral deviation of the normal organ.

Treatment.—Lateral versions and flexions are treated in substantially the same manner as the other similar conditions. Being less apt to occur, their existence usually signifies the presence of a more powerful cause, and one more difficult to overcome. Massage is even more indicated in this class of troubles than in the others.

At the conclusion of this subject, it may be well to add that all forcible procedures upon the endometrium had better be followed by half-dram doses of the tincture of cimicifuga every four hours, thus often avoiding considerable suffering and inconvenience.

Chapter XV.

PESSARIES—WHEN AND HOW TO USE THEM.

The use of pessaries for the treatment of uterine displacement has its advocates and its detractors. That they are useful is alone indicated by their extensive employment by the ablest practitioners of the art of gynecology, and that they are insufficient in many cases to cure, or even relieve, the patient, is also evidenced by the many kinds that have been invented, for no one is inclined to modify a well-known and oft-used agent so long as it does its work satisfactorily. Those who repeated unsuccessful attempts at the impossible with the pessary, soon discarded it entirely, and refused even to recognize the good it was capable of doing and continued to do in the hands of others.

A discussion of the uses and limitations of the vaginal pessary opens up the entire field of the causes of uterine displacements, too wide a subject for treatment in this short work. I shall, therefore, only allude to it so far as is necessary.

DISPLACEMENTS OF THE UTERUS.

The uterus is capable of displacement in any direction, varying from a simple inclination of the fundus towards the pelvic wall, or a slight sinking, to a complete tipping over so that the fundus lies up-side-down in the cul-de-sac of Douglass, or rests completely upon the bladder, or the cervix extrudes from the vagina so as to lie between the thighs. It may be so bent upon its own axis as to be hardly noticeable, or it may form a U-shaped curve. Lateral deviations are exceptional and not very marked. Upward displacements are not treated with the pessary, and need no consideration.

For all practical purposes, the uterus may be considered as tilted backward (retroversion) or forward (anteversion); or it may sink down into the vagina (prolapsus) with or without axial deviation (version); and it may be bent upon itself, either forward (anteflexion) or backward (retroflexion), with or without tilting upon the vagina (version). Or it may be twisted on its axis by growths and cicatricial bands (torsion). All possible combinations of these malpositions constantly occur. They cause many secondary troubles readily removable by replacement of the organ.

RETROVERSION PESSARY.

Backward tilting of the uterus is best treated with the Albert Smith retroversion pessary, which I consider superior to any of the others from every standpoint. It is made in six sizes, all of which should be in the possession of the practitioner, especially if an out-of-town man. The most serviceable one is the number three, and next to this the number two, one being the smallest, and six the largest, size. This will give immediate relief in retroversions of long or short duration, if the uterus is not bound down by adhesions, or weighted with diseased tubes and ovaries. If the uterine dislocation is acute, it will hold the organ in place until nature effects a cure, thus acting as a temporary support or splint. It will often be useful even when the uterus is bound down by adhesions, provided they be not too short and too strong. The examining finger readily detects a mobile uterus, and easily restores it to its proper position. When the organ is high, simple backward pressure upon the cervix tilts the fundus forwards. When the uterus, however, is firmly bound down, a pessary can only do harm by exerting pressure. No support should remain in place if it causes pain.

ANTEVERSION PESSARY.

What I have said of the Albert Smith retroversion pessary, I would repeat of Thomas' anteversion pessary, though in lesser degree. Inasmuch, however, as this ingenious gentleman has several anteversion pessaries to his credit, it is necessary to specify the one that consists of an Albert Smith pessary plus a movable hinged arch connected at the sides of the main support at about its middle. Objection has been made to the hinges because liable to offer an abiding place for the ubiquitous microbe. To those who find this an insuperable objection, I have only to say, find another as good, if you can, that is free from that defect. I have not found this a drawback to its long-continued use in some cases. It cannot be employed when the uterus is bound down by adhesions, or when the bladder is extremely sensitive, unless the sensitiveness is due to the pressure of the uterus, though even then it is often tolerated with difficulty. In such cases rest upon the back, as often and as long-continued as possible, gives relief, as also do warm vaginal douches.

The fact should not be overlooked, however, that this pessary can rarely be used with the same satisfaction as the retroversion instrument. Massage and tampons suitably placed

often do better. It is, however, sometimes signally useful for short periods in women who have no intrapelvic tenderness. Because of its narrowness at the hinge, it is apt, if worn continuously for several weeks, to cause erosions or indentations at the side of the os, from pressure, and these cause sacral ache that the novice might readily attribute to some other cause.

FLEXIBLE RUBBER RING PESSARY.

This simple instrument is capable of much useful service. It serves to hold up the prolapsed and retroverted uterus, and may often replace the retroversion pessary in simple retroversions. One objection to its use is the occasional irritation of the urethra from pressure, but this can generally be modified by using a smaller size. In time it becomes shrunken and soggy, and moisture permeates it, rusting the spring. I have used it in some old-standing cases of complete prolapsus in women too old to operate upon without being foolhardy if not culpable. Thus, I had a lady nine years ago with complete prolapsus, the uterus hanging out of the vulva almost as large as two fists, and so tender that she had to sit sideways on a chair with one of her arms thrown over its back. In fact, it was this attitude, so graceful in a young vigorous woman, that attracted my attention to this decrepit old lady of 74, to whom it was irksome. The uterus was replaced gradually in half an hour. A hollow rubber ball did not hold it in place, but was promptly pushed out. When she wore a cloth over the vulva to retain the ball she had pain. A large flexible ring pessary, however, though it was not self-retaining, was held in place with a cloth, and thus, in turn, supported the uterus, which in time became reduced and eventually somewhat atrophied, so that she wore successive rings without any extraneous aid until near her death in December, 1900, of mammary cancer, that she refused to let me remove.

THE HOLLOW RUBBER AND THE GLASS BALL.

These form an efficient and gratifying support in incomplete prolapsus, with or without cystocele or rectocele, especially if there is only a slight perineal rupture. The glass ball is the cleaner and more durable, but it is heavier, and sometimes it is too rigid. I prefer the hollow rubber ball.

But I never use the glass or ball pessary except as an improvement upon existing conditions in many cases where operative or other means are not available. They are makeshifts, but all makeshifts are better than the total abandonment

of a woman to her suffering. Then, too, the ball pessary is readily managed by the patient herself, for instance a country woman who cannot get better relief, and who hardly dare wear some other support that she cannot handle, and for which she cannot visit the doctor to be kept in good condition.

Country practitioners may be interested in one experience of mine in which I successfully treated prolapsus uteri in a cow that I never saw. An old country gentleman, a justice of the peace in one of the rural districts of New Jersey, owned an Alderney cow upon which he set great value. When she stood, she had no trouble, he told me, but when she lay upon the sward enjoying her secondary repast, her cervix uteri protruded from the vulva. The veterinarians pushed it back, but it was as obstinate in returning as Banquo's ghost. At my suggestion, he purchased a hollow rubber ball about four inches in diameter. This he induced the prejudiced and objecting veterinarian to introduce. The result was so perfectly satisfactory that even D. V. S. was gratified.

THE INTRA-UTERINE STEM PESSARY.

The existing prejudice against an intra-uterine stem pessary has its origin in the old-time hard-rubber and metallic stems. To introduce one of these for the cure of a severe flexion meant severe pressure over a small area of the sensitive corporeal endometrium, commonly resulting in metropéritonitis, for the local pressure set up an irritative inflammation of the uterine wall, whence this active process extended to the peritoneal covering of the uterus. Despite the use of anodynes and antipyretics, they had to be withdrawn. At last they were used with hesitation, and were recommended with reservation and many cautions. With the soft-rubber stem it is different. This is flexible, offers very little resistance, is soft, and yields to the inclination of the uterus, but at the same time maintains a cervical canal of ample caliber to permit the outflow of menstrual blood. It is never open to the objection of the rigid stem, though often enough temporarily irritating to the endometrium.

So many letters have come to me concerning the use and introduction of the soft-rubber intra-uterine stem, since my mention of it in my gynecologic papers in *The Medical Council*, that it became a time-consuming labor to reply to all individually. I, therefore, prepared a special communication that was to serve as an answer to all inquiries for additional information, and such parts of it are hereby reproduced as will still subserve this end.

The stem is made of pure gum or of white rubber ; is two inches long ; is corrugated longitudinally in its entire length ; and has a three-quarter-inch disc at its lower end. The upper end of this instrument enters the cavity of the body of the uterus when it is in place.

There were some flexible metallic stems made formerly, and may yet be had of some dealers, composed of either a number of perforated spheres strung upon a flexible wire, or a spiral spring. These were found, however, to give lodgment to blood and mucus, which eventually putrefied, resulting, inevitably, in a septic endometritis, and fortunate was the woman if matters grew no worse.

The old stem was used mainly to forcibly correct uterine flexions, but it often pressed so firmly upon the uterine wall which it sought to force back that metritis and peritonitis frequently resulted. In anteflexions, if the stem was dangerous, the only remedy was posterior section of the cervix, with its peculiar dangers. Or the uterus was left flexed, or it was periodically straightened, and the cervical canal dilated.

When the soft-rubber stem is in position, it insures free drainage of any liquid that may be in the uterine cavity. In this regard it acts like a valve, in fact is a valve, permitting the ready egress of menstrual blood, mucus or pus, though preventing the ingress of injected fluids of all kinds. It thus becomes the ideal instrument for uterine drainage.

In dysmenorrhea due to flexion, version or narrowing of either os, or of the cervical canal, it has no equal in giving prompt and permanent relief. I have seen some of the most exquisite suffering, only relievable by large doses of morphine and atropine hypodermically, continue for two or three days during each menstrual period, and yet have the next period following the introduction of the stem so free from pain that the women did not know of their condition until seeing their stained linen. The relief following its use in these conditions is almost incredible.

Sterility is very often due to the same cause as dysmenorrhea, and, when this is due to flexion, it is curable with the intra-uterine stem, which should be left *in situ* for two or three menstrual periods, being withdrawn at the end of the last day of flow, so that impregnation may take place, for this is impossible if the stem remains in place.

Because of the occasional difficulty in passing the blunt pointed stem beyond the point of flexion, I cut it very tapering, say the distal two-thirds of the stem tapering gradually to

a pointed end. This necessitates less dilatation, with its incident pain, and is not as irritating.

Oleaginous or pasty forms of medicaments may be smeared upon the stem so as to fill its grooves, after which it is inserted for purposes of local medication. Thus an iodoform or other antiseptic paste may be carried into the uterine cavity in septic endometrial trouble for its continuous effect, and yet permit free drainage, even despite a marked flexion or a decided stenosis of the canal or either of its orifices.

The following instructions will suffice to cover most contingencies arising in the introduction of the stem.

It should be passed all the way into the uterus, so that the disc fits closely against the cervix. For this purpose, the canal must be straight and of sufficient caliber. If the canal is bent, it must be straightened, and for this purpose I prefer Elliott's replacer, the uterine end of which consists of a flexible spiral spring that is readily bent forward or backward at the will of the operator by means of a milled head-screw at the other end of the instrument. It is always well to slightly counterflex the uterus so that there be no difficulty in introducing the dilator immediately upon the withdrawal of the replacer.

Dilatation should always be in crossed diameters of the canal, *i. e.*, laterally and antero-posteriorly in the order named. Immediately upon the withdrawal of the dilator, the stem is passed into the canal in the grasp of a suitable forceps. The stem is sometimes halted at the point of flexure, but slight pressure usually overcomes this. If not, the dilatation must be increased.

Sometimes the uterus is very mobile, and readily advances toward the abdomen when attempts are made to push the stem into place. In some instances counterpressure from above the pubis obviates this sufficiently to permit the entrance of the stem, but if it does not, the cervix should be held with a vulsella, cocaine being first used if there is much sensitiveness. Or the stem may be cut very tapering so as to enter more readily, and this is my habit now in almost all cases because it requires less dilatation, and is not so irritating. In young girls, or in those in whom there is extreme flexion or stenosis, it is necessary to give a general anesthetic. In all such cases there is considerable subsequent pain that must be controlled by rest in bed for several days, hot applications, and opium (gr. j) and belladonna (gr. $\frac{1}{4}$) suppositories as often as needed.

It has been my experience that there is no tendency for the stem to come out in cases that have not had the cervix dilated by child-birth, miscarriage, or by growths. In all these, the cervical canal is usually large and the cervix flabby, sometimes permitting the stem to slip out, either during washing, sweeping, dancing, or other physical activity, or during the menses. This is exceptional. Some come out persistently. When they do, there is almost invariably a retroversion, in consequence of which the external os points in the axis of the vagina instead of resting against the posterior vaginal wall, which usually serves to hold the stem in place by pressure against the disc. An Albert-Smith pessary is indicated in all these cases, as that throws the fundus forwards, and the external os and disc against the posterior vaginal wall.

Sometimes the stem sets up some local irritation. There may be a muco-sanguineous flow for several weeks. I have not observed any bad results from this so long as non-infectious. In fact, I view it as a safety discharge, a local depletion, during the establishment of tolerance. A thoroughly aseptic stem will cause no disturbance other than that of a foreign body, to which, however, the uterus eventually adapts itself as a tender foot to a new shoe. I have also noticed that the flow of blood, during the first one or two periods after the introduction of the stem, may be prolonged and increased.

If there is a fetid discharge, the stem should be removed and thoroughly disinfected, and the canal should be mopped with cotton soaked in hydrogen peroxide, or be syringed with this liquid, until all odor has disappeared. The stem may be reintroduced within a day or two, though warm aseptic vaginal douching had better be practiced for a week, or longer, both for its aseptic and soothing effects. I have used creolin and lysol and formalin within the uterus, but have found nothing so satisfactory as permanganate of potassium for the relief of septic conditions. It is harmless, but it stains.

The patient should be instructed to repeatedly examine herself during the first few days, and during her first menstrual period following the introduction of the stem, to insure its remaining in place. It may come out part way, in which event she is able to promptly push it back all the way. Should it, however, refuse to respond, or should it come out altogether, she ought to return upon the same day, if possible, to have it reintroduced, for then redilatation will be avoided, except in cases of extreme flexion, and in these the requisite dilatation will only be slight. If much time, say a week, elapses after

expulsion of the stem, its reintroduction, if troublesome in the first instance, may be equally as difficult again unless its end is cut in long tapering form, which had better be done. It is almost needless to add that, these self-examinations should be made with a clean or aseptic finger after suitable douching. Infection of a non-gonorrheal character may be carried in by the penis.

Many peculiar conditions are met with that are confusing until understood. Thus I had one patient retain a stem for four and a half months, when she suddenly expelled it. After this it could not be kept in place despite every effort to that end. Even after its introduction, the moment I let go it popped out on one occasion, and that very occurrence was suggestive. I looked for and found a septum in her uterus, coming down to the middle of the cervical canal. The end of the stem had impinged against its edge, was doubled up by pressure, and shot out the moment I removed the forceps. I then split the stem with grim satisfaction, and pushed it in place, where it remained, presumably with a split segment on either side of the septum. I would say, therefore, that if a stem persistently comes out and there is no pointing of the os in the vaginal axis, look for some anatomic peculiarity that may cause the annoyance.

THE INTRODUCTION AND FITTING OF PESSARIES.

To properly introduce a pessary, and yet cause the patient no discomfort, is an art. It is only learned by experience. But even experience is a sad teacher if the pupil is unfamiliar with the anatomy of the vulva and the female pelvis and its contents. It is an instance of being easy when one knows how—otherwise it is very difficult, and to some downright impossible.

It is first necessary to have determined, by examination, upon the kind and size of pessary required. It should then be well greased. The free hand is next used to open the vulva, and keep back all hair that might fall across the vaginal orifice, for, if caught by the pessary, considerable unnecessary pain may result. The upper end of the pessary is now placed over the vaginal orifice, and gently, but firmly, pressed into the vagina along its posterior wall, against which it is held with sufficient force to avoid the sides of the pubic arch. It should never be forgotten that while there is ample room for extension of the vaginal orifice backwards, there is none upon either side and forwards, that is, not enough for any practical purpose. After the pessary slips through the orifice of the vagina, the

index finger, or it and the middle finger, follow its upper part and guide it into place, while the lower end is guided by the hand that opened the vulva, care being exercised all the time to press back toward the perineum so as to avoid pinching the sides of the vulva between it and the pubic arch.

If it is a retroversion pessary, the finger rests upon the front of the upper bar, and pushes it behind the cervix, after which the entire support is pushed well behind the uterus, and the lower end adjusted so that it does not press upon the urethra, which it will do if a little too short, or if twisted. If it is too long, it will project from the vulva, and pinch the mucous membrane on each side against the pubic arch. The finger must press upon the os to note whether the uterus is in its proper axis, *i. e.*, directed about toward the umbilicus. Should it be too far forwards, the support must be withdrawn and its curve correspondingly reduced. If it still is tilted too far back, the pessary must have its curve increased. This is easily and quickly done by greasing, and then heating the instrument, preferably over an alcohol flame, when it is readily bent to any degree. It is inexcusable to forget one's self, and reintroduce it while still hot.

If it is an anteversion pessary, the index and middle fingers force apart the hinged and fixed bars of the support, and guide them up so that the cervix falls between them. The bending in this instance, should any be needed, is usually done upon the fixed, or posterior, arch.

The flexible ring is compressed, and readily pushed into the vagina, where the finger guides its upper end behind the cervix.

The flexible intra-uterine stem, being destined to pass readily into a bent canal for the purpose of maintaining it patulous, must have its way prepared. The first requisite, after determining the direction of the flexion, is to introduce the speculum, and then straighten the canal so that the dilator may be introduced to open it enough to permit the ready entrance of the stem, which is passed in with a long forceps, and pushed well up into place. The patient should then be instructed in self-examination so that she may notice several times a day, for the first few days, whether it remains in place or not. Should it partly protrude, she must press it back, and if this cannot be done, she ought to return within twenty-four hours for its reintroduction, as it is then much easier than if deferred for several days. When it partly protrudes and cannot be pressed back, it indicates a narrowing of the internal os, or an angle in the canal. Should it come out persistently, it is well

to look carefully for a retroversion, for it often happens that an irritable uterus will expel the stem from a flaccid cervix when the os lies free in the vagina instead of being covered by the posterior vaginal wall. A retroversion pessary will then insure the retention of the stem, because, by throwing the fundus forward, it projects the os against the posterior wall.

OTHER PESSARIES.

The pessaries I have mentioned will serve almost every purpose if the physician uses care and judgment. It is much better to become expert in the use of these than it is to be deficient in the use of all. In fact, a thorough practical knowledge of these few will better qualify the practitioner in the use of additional kinds than would a superficial acquaintance with a large variety.

REMOVAL OF PESSARIES.

To remove a pessary requires as much care, sometimes, as does its introduction. One or two fingers may enter the vagina to insure absence of adhesions, and easy disengagement of the cervix, especially in the anteversion hinged kind. During its withdrawal, the same rule should be observed as to pressure toward the perineum that obtains in its introduction.

A pessary, with the exception of the intra-uterine stem, should cause no pain whatever. The patient should arise from the table or chair without being able to notice any change, or, at least, she should not have any pain. She ought to be told to withdraw the support if it pains her, and if lying down gives no relief, and if she cannot do this she should report to the physician as soon as possible to have it done. Many pessaries are painful because they are too narrow, and pinch the cervix. This is especially true of the hinged anteversion pessary. In such instances, an indentation can be felt on the cervix, or it may be seen through a speculum.

It should be borne in mind that pessaries are employed to hold the uterus in a normal position, and that they just fit the parts so that coitus is not apt to improve matters though it, by no means, always disturbs them. Patients should, therefore, be cautioned to abstain from this indulgence until they are in condition to permit it without almost certain nullification of the treatment. As a pessary becomes displaced it is apt to cause trouble, and many well-fitting supports in married women are dislocated by coitus. They avoid making this admission, however, and prefer to blame the physician.

IN GENERAL.

Tender ovaries may also cause pain by impinging upon the pessary. The pain is then felt above the groin. This trouble is usually relieved within a few hours by from one to five drop doses, every hour, of the tincture of pulsatilla.

If the uterus is large and full of turgid venous blood, *hydrastis Canadensis* may be given internally and locally, or the alkaloid *hydrastine* may be given interally, and a douche of a solution of the drug itself may be used locally.

In acute local trouble, especially if the intra-uterine stem is used, and notably if there is any hysteria, five-drop doses of the tincture of *cimicifuga* every hour is indicated, and usually gives very good results.

If a pessary gives no trouble whatever, it should be inspected at the end of a week. The finger should sweep around the entire support in the search for adhesions, and it should be noted if there is any objectionable odor, or any discharge. If none of these exist, it may remain for a week or two longer, when there should be a re-examination.

An occasional douche with a five-per-cent. carbolic solution, or a borax-water wash, is grateful and beneficial, particularly if the pessary is removed and re-introduced. Should any adhesions be found between the support and the vaginal wall, the pessary must be removed at once, and is not to be re-introduced until after one or two days, and sometimes not for a week or two.

There are many other minor points on this subject that are soon gleaned in the use of pessaries, and which it would be tedious to enumerate. My object has been to suggest helpful hints to the man with little or no experience in the use of pessaries, so that he would be encouraged to begin their use himself in suitable cases, or to again take up and continue their employment if he should have done so in the past, and felt constrained to abandon the practice because of a lack of that knowledge which it is the object of this article to impart.

I have purposely refrained from naming many other pessaries for the reason that the ability to use thoroughly those named by me better qualifies the physician in the use of all other intra-vaginal supports, than does a superficial knowledge of a great many. There are many hundreds of pessaries. There are more than 100,000 physicians in the United States and Canada alone. How many of them agree with those who differ from me in regard to the utility of the pessaries I have named? How many with me? Who can tell? Upon these

points opinions differ radically, some, as I have already stated, condemning pessaries altogether. My own practice in this respect may undergo a change at any time. Those who adopt my suggestions for the present, may soon discard them for something they believe to be better. Yet will the encouraging fact remain, that had it not been for this plain little talk, those men would possibly never have begun the use of pessaries at all. There are very few pessaries, if any, that have not been invented by practitioners of ability, and in whose hands they did good. It is, therefore, the knowing how to use one well that makes it good. That is why I insisted upon careful selection of the size, and accurate fitting as to shape. Many who condemn these hard-rubber pessaries have never heated and shaped a single one.

MORE ABOUT VAGINAL PESSARIES.

This subject was discussed editorially in the *New York Medical Journal* of May 6, 1899, being inspired by an article upon this topic in the *Scottish Medical and Surgical Journal*, by Dr. J. W. Ballantyne, who found, in response to inquiries addressed to instrument dealers, that the sales of pessaries were upon the increase, but that fewer varieties were being sold.

The editor correctly stated that the vaginal pessary is a useful implement when properly employed, and that it is often more advantageous to the patient than an operation, in all of which I concur. I also agree with the statement that the soft-rubber ring pessary soon becomes objectionable in most cases, but that is not so much a reason against its use as it is in favor of its being occasionally looked after and replaced by another. The assumption that all pessaries are useless or harmful, is too stupid to merit refutation. The good they have done has caused their extensive use, and there is no reason why a possibly equally as extensive an abuse of them should be followed by total disuse.

The mechanism of the vaginal pessary is not well understood, though it has been often enough explained to be clear. Many suppose it to hold up the uterus with the pubes as a brace. The real fact is that the vagina itself crowds it up into its widest part, and against the uterus, which falls into a position corresponding with the special persuasion exerted by the pessary in conformity with its shape. It should comfortably fill the upper part of the vagina without putting the mucosa enough upon the stretch to smooth its surface or cause any tension, and the lower end of the pessary must fall back of the

pubes, or project just under it. If it is too short, it is apt to make uncomfortable pressure upon the urethra—it will set against the bone under certain conditions.

Better than any pessary, when the vagina has lost its tone, and it usually has in uterine displacements, is the use of the faradic current, the coil of short thick wire then being indicated. One electrode is placed within the vagina, while the other is put upon the belly over the pubes. The application should last about ten minutes, and be repeated on alternate days. This causes contraction of the muscular wall of the vagina, gradually restores its tone, and eventually leads to its performing its normal function of helping hold up the uterus by the firmness of its walls. This treatment is usually overlooked, and should be part of all treatments for version and prolapse of the uterus.

Chapter XVI.

STERILITY.

Sterility is mentioned here only to indicate the importance of determining its cause, which may be anything that prevents the contact of the male and female elements. Of course, the absence of the ovaries, Fallopian tubes, or uterus, or their defective development, is a self-evident cause. A woman may be sterile because of obstruction to the passage of semen into the uterus, as in occlusion of any part of the cervico-vaginal canal, vaginismus, conical cervix, uterine displacement, and catarrh, and new growths; or it may be due to inability to produce a healthy ovule, as in ovaritis, cystic ovaries, or pelvic cellular or peritoneal inflammation. Again, the healthy ovule may be excluded from the uterus by disease, constriction, or displacement of the Fallopian tubes. Finally, the vitality of the semen may be destroyed, or fixation of the ovum may be prevented by uterine catarrh (endometritis), hysterrhagia, and new growths. Sterility can only be cured by removing its cause, which must be carefully searched for until found; or, if it is incurable, the patient may be so informed, but on this point it is well to go slow, and be absolutely certain before giving so sweeping a prognosis, as she may, nevertheless, subsequently become pregnant, much to your discomfiture and, perhaps, cost.

Treatment.—Sterility, due to endometritis (uterine catarrh), is properly treated by attention to the endometrial trouble. As a rule, thorough curetting and subsequent aseptic irrigation is one of the best remedies under such circumstances. Tubal obstruction is often due to endometritis, when the curette is also the remedy. When sterility is caused by ovarian disease, this must be cured before impregnation can occur. Other pelvic inflammatory or congestive disturbances likely to make a woman barren, such as cellulitis or peritonitis, must promptly receive the most careful attention so that it may not be too late to give relief.

A very frequent, if not the most frequent, cause of sterility is uterine obstruction, and it is usually associated with dysmenorrhea. In many instances, simple straightening and dilatation of the canal is sufficient to permit impregnation, but

this fails in a great number for the reason that the flexion and resulting occlusion return within a few hours after treatment. It has, therefore, been my custom, in such cases, to depend entirely upon my intra-uterine soft-rubber stem. This is introduced in the manner already described in the discussion of the treatment of obstructive dysmenorrhea. I let the patient wear it over two or three menstrual periods, and instruct her to report to me on the last day of the last period she is to wear it. It is then removed, and the patient enjoined to have coitus at the first opportunity, and remain flat upon her back afterwards, the same process to be repeated two or three times within the following week so as to insure impregnation. The continued wearing of the stem eventually leaves a well-opened canal that insures impregnation if her other organs are not diseased.

A recent case of mine was that of a stout lady, 33 years of age, who had been married nine years, and been impregnated only once, and that about eight years before. She miscarried, and was not able to become pregnant again. Ever since then, she had obstructive dysmenorrhea. She had a retroflexion. I introduced the intra-uterine stem at the end of a menstrual period, and removed it the last (fifth) day of the second subsequent period. She had coitus that night, and was not unwell afterward, but pregnant and happy in consequence.

Objection has been made to the use of this stem upon the ground that it would cause serious irritation, but this is merely a fanciful contingency, as it seldom occurs. I have only seen one case in which it was advisable to remove the stem, and in this instance its removal was reluctantly permitted because the patient feared that the openness of the canal would result in impregnation, but her fears were never realized, for she took care that they should not be. The soft stem has none of the objections of the rigid one, and all of its good qualities, mine being so arranged that it permits ready egress of the menstrual blood.

ARTIFICIAL IMPREGNATION.

I have had successful experience in two cases of artificial impregnation, which gives me the right to speak with some authority upon the matter. It is first necessary to satisfy one's self that there is not sufficient tubal or ovarian disease to prevent the passage of the ovule into the uterus. Then we must be satisfied that the semen to be used is not inert—sterile—and this is determined by microscopic examination,

the spermatozoa being intact, not broken up, when the semen is capable of impregnation. Then obstruction, such as flexion or stenosis of the uterine canal, or malposition of the uterus, must be corrected. If, after all this, the desired result is not obtained, two methods are left open. The simpler, or less objectionable, consists in the postural treatment of sterility, by which coitus takes place with the woman in that position which makes the os uteri point down so that it may be bathed in the ejaculated semen. This requires good diagnostic skill in ascertaining the position of the uterus, and a thorough knowledge of anatomy to insure securement of the correct attitude at the critical moment and thereafter for an hour or more. Dr. Walter R. Gillette, of New York, published a paper upon this subject in the *Archives of Medicine* (Seguin's), Feb., 1890, under the caption "A Postural Method of Copulation for the Cure of Some Forms of Sterility in the Female." It caused considerable comment at the time. My own method, the Gillette postural treatment failing, was to secure the semen fresh from the proper source, and force a few drops of it into the uterine cavity with a syringe. The method is simple and effective, though distasteful to all concerned.

Chapter XVII.

GENERAL CONSIDERATIONS.

ON VAGUE INTRA-PELVIC TROUBLES.

One need not be long in practice before obscure and troublesome cases of chronic female intra-pelvic troubles are encountered. It may be an ovarian tenderness during the menses, or a sciatica upon either side, or a sacral ache, or vesical irritability, or a sluggish rectum, or any one or several of these or other distressing symptoms. The cause is a mystery. Vague therapeutics are resorted to in the vain hope that something may be encountered by chance that will do good, and too often, alas, are these aimless measures resorted to with the sole object of getting fees rather than honestly admitting helplessness, and advising a conference with some one else of equal or superior ability.

Many of these persistent ailments are remediable when their cause is known. Very often they are not reflex at all, but very direct in their origin. It does not require many years of practice to observe the preponderating frequency of intra-pelvic trouble in women, at least upon the left side. The reason is a simple one, and yet not generally understood. A careful consideration of the anatomy of the pelvic contents, especially with regard to their mutual relations, will clear up many a mystery of the kind suggested. I will just touch upon these relations, and advise their more careful study in the proper text-books by those who feel the need of posting in this important region.

Emerging from the anterior surface of the back of the pelvis, by way of the sacral foramina on each side, are the sacral nerves, and behind them is the pyriformis muscle, separating them from the bone and ligaments, its fibers often interlacing with these nerves. Upon the left side, the lower end of the large gut descends in front of these structures. In front of all, against the back of the anterior pelvic wall, is the bladder. Between the bladder in front and the sacrum and rectum behind, is situated the uterus. Extending out from this upon each side to the lateral walls of the pelvis are the broad ligaments, and upon the back of these are suspended the mobile ovaries. The difference between the right and left sides consists in the presence of the gut on the left side of the

posterior pelvic wall at the level of the left ovary, with nothing corresponding to it on the right side, though the pelvis there is no smaller.

It would follow, therefore, that in all habitual intra-pelvic congestions equal on both sides, pressure must be greater, or, at least, more direct on the left side. It also follows from this, that pain must manifest itself upon the left side before it does upon the right. Congestions here may be just enough to cause left-sided discomfort while none is experienced upon the right side. Straining at stool more often causes pain or discomfort on the left than upon the right side, for the same reason. There being more in the left half of the pelvis than in the other half, pressure effects must be commoner on that side. The ovary is the most sensitive of the pelvic organs, and it is exquisitely sensitive to pressure. A distended bladder and rectum, together with firmly contracting abdominal muscles, and a resisting pelvic floor, while emptying the rectum and bladder, severely and directly squeezes the ovary, and there is consequently left hypogastric and inguinal pain. I have cured cases of this kind, in which there was no special local trouble, by softening the stools, and insuring their regularity, and forming the habit of emptying the bladder at regular intervals.

There are probably very few who read these lines who have not experienced stooling pains along the course of the sciatic nerve or some branch of the sacral plexus during severe straining efforts at defecation. This, again, is a pressure effect as natural as any logical sequence.

A woman with an inflammatory exudate, possibly involving an ovary, is very much subject to these effects, and if it happens to be on the left side, so much the worse for her. At each menstruation, these parts become congested, and consequently swollen and tender, resulting in increased pressure effects at the same time that there is added sensitiveness. If the mass is large, enough pressure is also exerted upon the sacral plexus to cause pain within the areas of distribution of some or all of its branches. Should the rectum be loaded with hard feces, as is so commonly the case in these conditions, the symptoms are so much worse; and constipation is common in these cases because defecation is avoided on account of the pain that accompanies it, especially near and at the menstrual period, thus ultimately adding to the trouble. The same pressure effects, increased by local congestion and its entailed hypersensitiveness, cause frequent micturition and often, also, dysuria.

With the light thus shed upon these vague (?) ailments, it becomes easy to solve the riddle as to the causes of so many of the aches and pains of women. The involvement of the sacral plexus explains why many women with intra-pelvic congestions, especially if they also have an exudate, feel so badly from the waist down, and would, if they conveniently could, tear off and throw away the pelvis, hips, and both lower limbs for the sake of some comfort.

But "what is the best treatment for these troubles?" is a pertinent query. "Is the prognosis good?" is another. The likelihood of cure depends largely upon how faithfully and persistently treatment is carried out. It must be remembered that these cases are, necessarily, almost always of long standing. The patients have been to many physicians, have failed to get desired relief, and are correspondingly dejected and skeptic. Thus they are difficult to handle at the outset. Their confidence must be secured, and they must be interested in some plan of treatment that they understand is to cover a period of many weeks. Then they must have abundant rest from arduous work, though moderate exercise is to be commended. The stools must be lax and regular; the food nourishing and easily digested; they must have plenty of refreshing sleep, and sufficient outdoor exercise. The good effects of massage obtained from sensible bicycle riding cannot be overestimated, and this exercise also insures good air, a healthy appetite and digestion, and refreshing sleep. Locally, there should be several warm vaginal douches daily. But the most important treatment consists of local galvano-faradization. A current that is comfortably borne may be continued for from five to ten minutes, two or three times weekly, with the anode (positive pole) at the seat of the local trouble. Sometimes it is advisable to apply the anode within the uterus half the time, and against an effusion for the balance of the period. The kathode (negative pole) should be large, and applied to the back or belly. As improvement sets in, the intervals between treatments may be increased.

It may also be useful, in fact often is, to use suitable drugs, such as *cimicifuga*, *pulsatilla*, *hydrastine*, *viburnum*, *et al.*, according to indications.

FECAL IMPACTION OF THE SIGMOID FLEXURE IN WOMEN.

Dr. Joseph P. Bacon, of Chicago,¹ makes some valuable suggestions upon the above subject. He has found, in several cases that were sent to him for abdominal operation, simple

¹ *Chicago Medical Recorder* for October, 1897.

fecal impaction of the sigmoid flexure accompanied by local pain, backache, and such severe tenderness that a satisfactory examination was only possible under anesthesia. Cure was effected by the conjoined use of laxatives and high enemata. In all, the uterus was relatively normal at least, and the right ovary and tube as they should be. The sensitive mass on the left side, however, closely simulated a tender pus-tube, an inflamed or otherwise diseased ovary, or a pelvic exudate. But the clearing out of the sigmoid with a laxative and a high enema invariably permitted the demonstration, under anesthesia, of a normal tube and ovary on the left side.

Lessons like these are well worth recording and remembering. Their practical application not only prevents the unnecessary mutilation of women, but insures prompt and harmless relief of a most distressing ailment.

A sigmoid flexure with a long mesentery is bound to fall into the pelvis, and such a location of this double-curved portion of the gut is far more common than is generally supposed. This statement is the outcome of repeated observations in the dissecting-room and upon the autopsy table. In fact, I have seen the sigmoid coils extend so far over to the right that they could easily be laid upon the cecum. I have even seen the transverse colon in the form of a V-shaped pendant, with the apex well down in the pelvis. With the relative frequency of these anomalies of the colon in mind, it is always well to clear out the lower bowel if there is the slightest room for doubt in the diagnosis of intra-pelvic disease. Sometimes such a precaution will prove a veritable *coupe* in cases that have suffered long, both from the symptoms and a multiplicity of counsel.

It must not be forgotten, however, that a high enema should be given to insure perfect results in cases of sigmoid impaction simulating tubal, ovarian, or inflammatory disease. These are best given with the patient lying down, either upon the back or the left side.

INSANITY AND THE PELVIC DISEASES OF WOMEN.

Experience has shown a close relation between disease of the pelvic organs and perturbations of the mind, not alone in women, but also in men. The greater frequency of this relation in women is probably accounted for on the ground that woman is more subject to intra-pelvic disease, for the double reason that her pelvis contains more, and its contents are subjected to greater strains and exactions, while she is also the more emotional and impressionable, and thus the more likely

to yield remotely, or reflexly, to these greater and more frequent local disturbances.

The female departments of the great insane asylums show a large proportion of tubal and ovarian disease. While all of this does not bear a cause-and-effect relation to the insanity with which it is associated, the relation does exist in very many. Experience has shown that when incurable pelvic disease causes insanity, its removal is followed by re-establishment of the normal mind. It is by no means easy to determine, in many instances, whether the mental disturbance is due to pelvic disease or not. Sometimes, in fact, a disease of the mind, or other portions of the nerve-centers, may so influence the nutrition of the pelvic organs, by modification of their trophic nerve-supply, as to set up circulatory perturbations, giving rise to the usual pains and aches and other discomforts due to congestion, active or passive. Neuralgic states of central origin are not at all uncommon.

Thus, if a patient complains of intra-pelvic pain, or of back-ache, or tenderness upon either or both sides of the lower belly-wall, and yet has no sign of local trouble, and is not at all sensitive to intra-pelvic examination, she may safely be set down as having trouble with her nerve-centers rather than in the reproductive organs.

Not long ago an elderly lady called upon me complaining of "womb trouble" of many years' standing, and of which she could not get cured. She had seen many physicians, some of them very good ones, too, but without benefit. She had left the menopause more than fifteen years behind her, and dated all her trouble from the birth of her youngest child, who was then in her twenty-first year. The patient's nourishment was fair, and her face much bewrinkled. She was evidently a woman of nervous temperament, and excitable. The uterus was much atrophied, her pelvic contents typical for a woman in her period of life, and she had not the slightest local tenderness. But she combatted the diagnosis of nerve-trouble. Despite her conviction, she took the prescribed treatment directed solely for the nervous system, and honestly reported herself as much better. The improvement was rapid. But one day she had a return of her trouble, and felt her womb way down even while in the office. I examined her in the upright position to insure her womb staying down so that it could not be missed. It was, however, where normal anatomy had made a place for it. But she only persisted in its having "slipped up again." She was put upon her old treatment, but disguised, and there was inserted the smallest-sized Smith pes-

sary, which was of no value mechanically in the vagina, in which it could move about quite freely, and was not apt to cause irritation because small and clean, and ready to shift about as local conditions required. But that pessary was an efficient cure by its long-distance effect upon the mind.

The influence upon the mind of diseases of the reproductive organs will not be doubted by any one who has seen the marked hypochondriasis of those afflicted with chronic cystitis. We often see very marked mental perturbations due to constipation; but this is readily granted now on the ground that it is caused by auto-intoxication, at the same time ignoring the well-established fact that all the structures of the body either generate for special uses, or at least contain, substances, animal juices, that profoundly impress the body, as is evidenced by the effect of extracts of these tissues when administered by the mouth or hypodermic syringe, or the changed conditions of the body resulting from their deprivation, as when certain glands, say the thyroid, are destroyed or removed.

The potent influence of the ovaries upon the body, as well as upon the mind, has long been known. That of the thyroid was known to surgeons years before it had been worked out in the laboratory, by the production of myxedema after total extirpation of the gland. The administration of this gland, or of its extract, by the stomach, cures not only the mental, but also the physical, anomalies of cretinism and acromegaly and goiter. If this is true of a gland of so relatively unknown function and indefinite importance, how much more so of the ovaries; and, if these, why not the uterus, and even of their connecting tubes, nay, even of any of the bodily tissues, but in varying degree?

Now one of the lessons we may glean from all this is that there is much in it that is suggestive to the general practitioner. Many a woman with newly-developed mental peculiarities may have a causative intra-pelvic disease. That is one point. Another is that many a case of "womb trouble" is of central nervous origin; is, in fact, not "womb trouble" at all. The differentiation should always be carefully made. I do not here propose going into the differential diagnosis of all the conditions that may thus arise, for that would require a good-sized book, and it would be a valuable book, too, but I now only call attention to the matter so that others may ruminate over it.

Do not take a woman's word for having intra-pelvic disease, but examine her, and see for yourself whether she is right or not. If the parts are normally placed, look normal, and are not tender, there is only the slightest likelihood of there being

any disease within the pelvis, however much the patient may feel it there. Trace the trouble back along the nerves that supply the parts complained of, even to the cord, and up this to the brain. It will be found somewhere along this course—or should be. On the other hand, if there is mental trouble, and there is any reason whatever to suspect pelvic disease, the pelvic organs should be carefully examined, and if disease of these be found, it should be treated with a view to its cure, if this is possible, or, at least, of its relief, and this failing, excision should be done, if practicable.

If every physician in the land were to begin noticing the relation between pelvic disease in woman and mental disturbance, and act accordingly, thousands of suffering women would soon be markedly benefited, and it seems almost needless to add that so, also, would those who live with them. In this direction alone is it possible for most practitioners to find a field of useful labor. Many a peculiar mental or pelvic case will thus yield to a new treatment, because rational, intelligent, that up to then had stubbornly refused to yield to hackneyed attempts. In short, some cases of mental disease must be treated locally within the pelvis, while, contrariwise, others of pelvic disease must be treated along the nerve-trunk, spinal cord, or in the brain. It is our business to correctly diagnose these cases so that the only proper treatment may be instituted with satisfactory results.

UNJUSTIFIABLE PELVIC OPERATIONS.

It was held some time ago by Wharton Sinkler, of Philadelphia, that the removal of healthy ovaries for the cure of nervous affections was unjustifiable, and Dr. Lusk, of New York, was inclined to consider it malpractice. Somewhat recently two Italian physicians, Drs. Angelucci and Pieraccini, of the Provincial Asylum of Macerata, addressed letters to prominent alienists in various countries, most of them in charge of asylums and clinics, resulting in the tabulation of one hundred and fifteen cases subjected to a pretended operation, and one hundred and nine actually operated upon. Their studies forced them to the sensible conclusion that the removal of normal intra-pelvic organs for the cure of general nervous affections was wholly unjustifiable, and that hysteria in itself is actually a contra-indication for the performance of a serious gynecologic operation. They suggest, further, that in hysterical conditions not remedial by other means, a simulated operation may be beneficial. The pathologic condition of the uterus and its adnexa should be the only indication for their

removal, and that all the benefit that may accrue to nervous or insane women from the removal of any part of their generative organs is merely due to suggestion, and this is equally effective in simulated procedures.

The salient weakness of the specialist is that he is prone to see with but one eye and to a single purpose. When the wound has healed and the patient is dismissed alive, the operation has been a success, however much, in the near future, she may justly wish that it had terminated less favorably for the operating surgeon's personal statistics.

It really did not require the painstaking clerical work of these two Italian physicians to tell us what nearly every general practitioner has for some time been positively assured of. But their work amounts to demonstration, and to that extent it is valuable for the effect it will have upon those in active competition for numeric effects. It is to be hoped that all those who need the bringing home of the lessons of this investigation will see and digest them, and act accordingly.

ON ELECTRICITY IN PELVIC DISEASE.

In a paper on "Female Pelvic Diseases Treated by the General Practitioner," the author, whose name is withheld out of purest charity, devotes nearly all of his time to show how and why the ordinary practitioner cannot treat these common afflictions, how they rapidly grow worse under his ill-judged care, and why they should, at once, be sent to the specialist, and, by inference, to the one setting so delectable a dish of egotism before his professional audience, for it was delivered at a medical society meeting. He ill-advisedly remarks: "Except by a few fanatics, electricity in the treatment of pelvic inflammations or pelvic disease is never mentioned."

This can only properly be designated as the effrontery of ignorance. Some of the most brilliant as well as the most reliable practitioners and investigators in our profession to-day, in all lands, have testified to the remarkable efficiency of this wonderful agent in the treatment of pelvic disease. Its still limited employment is due to ignorance of its value by those who have the opportunity for its best and widest use. This tyro specialist—for such he appears to be—seems never to have heard of Apostoli and his remarkable achievements in the treatment of uterine fibroids and other female diseases. Or does he class him among the fanatics? He can not be familiar with the work of Apostoli and Laguerrière, showing that anodal diffusion of 50 milliamperes and over is destructive to micro-organisms. He seems entirely unacquainted with the fact that ger-

micides may be sent into and through infected districts by kathermic action with much milder currents. Of the well-proven alterative action of the galvanic current, he seems never to have heard.

He is apparently unaware that Keith, in several years, treated several hundred cases of uterine fibroid in which he achieved permanent benefit in a larger proportion than even Apostoli did, though he claimed ninety-five per cent. Dr. Massey, of this city, would not be accused of being a fanatic, and he has also reported some most gratifying achievements by electricity in female pelvic disease. I might multiply examples manifold, but refrain because it seems unnecessary.

The efficiency of electricity to effect nutritive changes, to increase or diminish local circulation, to carry medicaments directly into affected tissue, to stimulate or to inhibit cell action, and to cure intra-pelvic disease, even of cases that are inoperable, is so well established that the man who denies its great practical utility thereby announces his own ignorance of a long ago well-established fact with which it is his duty to be familiar, and stamps himself as too prejudiced to learn. Investigation is so incessant, progress so steady, and improvement so rapid, that one must be very careful about condemning what seems to be a new thing, lest he overreach himself and show to his more enlightened associates that he is really a laggard by the wayside, not a good man to entrust with a patient's welfare, and, above all things, too narrow-minded to be a competent consultant.

Chapter XVIII.

GENERAL CONSIDERATIONS (Continued).

COITUS AS A DISTURBING ELEMENT.

I prefer to preface what I am to say on this subject by laying down some propositions which will probably be generally accepted. Most likely all will agree that married women are more subject to intra-pelvic disease than single women are. Every one with only moderate experience will also have observed that married women respond less readily to treatment than do the unmarried. It is also a fact that the average mother with young children is not in as good health as she was before maternity, and that in this regard she is out-ranked by those of her acquaintances who have not married, or who, at least, if married, have no children. I am also well aware that the added cares of household duties and child's nurse are a tax upon the strength, and that the additional sapping incident to wet-nursing makes the mother's lot a still harder one. But all these facts intensify the point I now desire to make.

With the sexual instinct in abeyance, there is saved to the organism, in earlier adult life at least, much energy that is either conserved for future emergency or that expends itself in added nutrition, as evidenced by the vigor and bloom of youth. How many women lose this bloom, and become relaxed after even a short married life, though conception does not occur, who have rarely known a sick day before marriage? Many are the cases of this kind that come under the notice of physicians.

Many such changes have been traced to the disturbing influence of coitus. The sudden calling into full and persistently recurring activity of those previously unexercised parts, causes local congestive and inflammatory troubles, actively maintained by a continuance of the original exciting cause. The suffering woman submits out of a conscientious, and even fervid, sense of marital duty. The man persists in blissful, but eventually bound-to-be painful and expensive, ignorance of the damage he is causing. If the physician is eventually consulted for leucorrhœa, backache, dragging sensations in the

hips and hypogastrium, and the many other ills peculiar to intra-pelvic troubles, he usually adopts routine treatment, complacently pockets his fee contentedly conscious of duty well performed, while his patient does not get well, but is induced by him to bear her sufferings philosophically and with gratitude because she is, at least, getting no worse. This portrays a condition that most practitioners can readily recall, and that even many patients would not be slow in recognizing.

The local factors causing this misfortune are frictions and associated active disturbance of the relation of the uterus and its adnexa to the pelvic walls and other pelvic contents. To this must also be added the nervous strain of simulating pleasure where there is but pain, and the morbidness caused by secret suffering, for those matters appear of so delicate a nature to a retiring modest woman that she is loath to mention them, even to her trusted medical adviser. Thus the condition steadily gets worse. A small vagina or a large male organ usually causes trouble, even if gratification is infrequent. Excessive use of these parts is almost always at the expense of general, as well as local, well-being. The first effects of initial coitus, exclusive of the common rupture of the edge of the hymen, is congestion, usually of the vaginal mucous membrane. Frequent repetitions soon involve the uterus and ovaries. These conditions are aggravated by the menses. Then follows a train of ills, the weakest part succumbing first, such as endometritis, versions, flexions, vesical irritability, and ovarian tenderness and congestion. These the physician is called upon to treat.

That removal of the cause constitutes the first requisite to successful and intelligent treatment, is an axiom in medical practice. Few, however, interdict coitus in treating these affections of married women. Yet they cannot help observing the difference in responsiveness to treatment for these conditions in the married and in the unmarried, in favor of the latter. Few men even consider the advisability of interdicting coitus until the patient is well, and many of those who do appreciate, at least in part, the desirability of abstinence, refrain from advising it, on diplomatic grounds. But this is cowardly, an injustice to the patient, and debasing to the guilty physician. I have repeatedly seen so many good results follow total abstinence from sexual gratification that it was the only necessary treatment in many instances.

Thus far allusion has been made only to intra-pelvic trouble caused by coitus, but it is a much greater factor in continuing and intensifying intra-pelvic disease of other origin,

and there is where it is most baneful, because much oftener a disturbing element. The lesson to be learned, therefore, from this discussion, is the extreme value of rest of the sexual organs in treating them for congestive or inflammatory trouble. It is not enough, however, to advise the poor suffering woman on this subject, for she is very likely to say nothing about it to her husband, for the double reason that she has a natural delicacy about telling him of conversations upon that subject, even with her physician, and she is loath to veto an act to which she conscientiously believes it her marital duty to consent. The most satisfactory plan from every standpoint is to spare our patient the indelicacy of the injunction, but to request her to send the husband, to whom the necessity for abstinence can be fully explained, as well as the probable dangers of a disregard of the injunction, together with instructions to inform his wife of these directions and the reason for them. If subsequently found to be necessary, because of the husband's failure to protect his wife against his own aggressions, she should be sent away to rest while undergoing treatment. I affirm that the practitioner who will reason and act upon these suggestions, will find many obstinate cases promptly yield, though having failed to respond to any other kind of treatment.

AN OBJECTION TO THE VAGINAL DOUCHE.

In a recent number of the *Lancet*, Dr. Giles cautions against the indiscriminate use of the vaginal douche, on the ground that it neutralizes the normal acidity of the vaginal mucus by sweeping out the local bacteria that cause this reaction by the formation of lactic acid, to which is attributed the important quality of being destructive to the inroads of pathogenic germs. On the same grounds, he objects to the douche before or during labor. To all of which I feel impelled to say that, during the prevalence of the custom of ascribing almost everything to germs, the wise man reserves his decision, and the polite one holds his peace. But I do know that the douche is a valuable aid to treatment, and would suggest that vinegar, which in itself is a good antaggonizer of pathogenic germs, be added to the routine douche for the purpose of supplying the acidity that is otherwise neutralized. My own objection to the use of the douche in labor is that it removes the viscid and highly lubricating vaginal mucus. Besides this, its routine use is needless, is meddling, and, therefore, bad.

RECTAL IRRIGATION VS. VAGINAL DOUCHING.

While it is a common practice to douche the vagina with various kinds of solutions, and while it is quite generally, as well as properly, understood that such a douche is most efficient if long continued in the recumbent position, though it is nevertheless the usual practice to give a short, one or two quart, one with the patient sitting up, it is not generally known that rectal irrigation is more efficient than the vaginal douche in certain instances. One of these, and the most prominent, is for the purpose of easing uterine congestion by the local application of heat. A vaginal douche can only do this to the vaginal portion of the cervix, while the distention of the rectum applies it through the adjacent thin rectal wall to the entire length of the back of the uterus. The practical difference in the efficiency of the two methods is every bit as great as one would naturally anticipate. Cases that do not respond to treatment by the usual vaginal douche and its associated treatment often improve at once if rectal irrigation is substituted.

A NEW TREATMENT FOR GENERAL SEPTIC INFECTION.

Dr. Van Telburg-Hofman, of Sumter, S. C., is the author of a remarkable paper in the *Virginia Medical Semi-Monthly* of March 8, 1901. It is remarkable in that it seems to prove general septic infection readily curable by the production of a subcutaneous abscess by means of the injection of oil of turpentine.

He cites three rather conclusive cases, two being his own, the other that of another physician acting under his suggestion. He gives the credit of the treatment to Dr. A. Fochier, professor of clinical obstetrics at Lyons, Belgium. He observed the subsidence of a general septic infection upon the appearance of a local suppuration in so many cases that he was induced to experimentally try the effect upon a septic patient of an artificially produced phlegmon. He, therefore, caused one by the subcutaneous injection of oil of turpentine in his next case, and with such decided success that he repeated the procedure in other cases with like results.

Dr. Van Telburg-Hofman injected 15 minims of the spirits of turpentine hypodermically in the upper part of the left thigh in case No. 1, which had had septic fever for more than a week. The effect was "remarkable," but six days later there was a relapse, and the dose was repeated, but in the

upper left arm, with like good results, this time permanent, as she left for home five days later.

The resulting abscesses contained odorless pus showing the presence of turpentine, and they healed up within several days after being opened.

This treatment will bear a trial. The effect upon the mind and appetite is good, the one clearing and the other returning, while the temperature remains high, though steady. We should have reports of further trials of the treatment.

THE SEXUAL ORGANS AS RELATED TO THE NARES.

Dr. John Noland Makenzie¹ calls attention to the close relation often found between the nasal mucous membrane and the sexual apparatus. He first calls to mind that the tissues covering the septum and turbinates are erectile, and that there is often a sympathetic or correlated congestion of these structures in women during the menses, and that in case of congestive conditions being already present, they are intensified at this period. Besides this, sexual activity in the male is also apt to be followed by similar turgescence of the erectile tissue of the nares. These are facts well worth bearing in mind in the treatment of rhinologic affections during periods of sexual excitement or activity.

The relation of the sense of smell to sexual desire is well known, and many are the cases of complete or partial impotence resulting from loss of the olfactory sense, especially in men. The congested nasal mucosa in a rhinitis has its vascularity increased by sexual excitement, and that this is not due alone to the exertion incident to coitus is evidenced by the fact that it often accompanies purely mental sexual erethism.

¹ In the January, 1898, number of the *Johns Hopkins Hospital Bulletin*.

Chapter XIX.

REST, COMMON SENSE, INTRA-PELVIC MASSAGE, AND THE BICYCLE IN GYNECOLOGIC CASES.

REST AND COMMON SENSE IN GYNECOLOGIC PRACTICE.

There are two classes of practitioners who claim to relieve suffering women of the ills their sex alone can experience—those of one are very free with the knife, and are ever ready to condemn the other for incompetence, ignorance, and pretension. They justly claim that many women must suffer all their lives, and even live shortened lives, for lack of operative relief. On the other hand are those who do not operate at all, and accuse the operators of unnecessary surgery, very justly pointing to numerous instances of needless operations entailing useless expense, increased and continued suffering, or even death, or these combined. A third class may be added with propriety, composed of those who have the ability to, and do, operate whenever the needs of the patient seem to require it, and who yet have the courage to refrain from surgical interference if the patient's interests seem otherwise best subserved. These are the practitioners of good judgment, of common sense, and of uncommon honesty. They belong to the highest type of the profession, and are worthy of emulation. These are the most successful men; they have heads, good heads, and they use them.

The following are a few precepts well to bear in mind: The relative character of the pelvis and its contents should ever be remembered; the hard, unyielding, bony walls, reinforced by firm inelastic ligaments, and padded with soft muscles; having its elastic musculo-ligamentous floor, and containing the uterus and its adnexa, with the bowel behind and the bladder in front; the latter two hollow and elastic, and of varying size; the uterus, firm, but perched upon a collapsed tube (the vagina), and connected with the two firm ovaries. Upon these rest the soft coils of the ileum. The walls do not yield, the floor only moderately, and never as readily to sudden pressure as when this is applied gradually, unless it be considerable.

The pelvic contents are characterized by great mobility in the following order; Ovaries, tubes, uterus, rectum, bladder and

vagina. The ovaries and tubes and the uterus are freely movable in all directions. The rectum expands and contracts, and is capable of lateral inclination or rotation. The bladder hugs the pubic bones by its anterior surface, but readily expands up and back. The vagina is capable of great distention upon occasion, as is exemplified in the passage of the babe, and of elongation, as occurs in coitus and in some operative procedures.

The therapeutic value of rest is so great that it can hardly be exaggerated, and is seldom fully appreciated. The very mobility of the pelvic contents insures them against injury that would otherwise result, for they are thereby enabled to recede before varying degrees of force, such as the descent of fecal matter or the distending bladder. But when these parts are congested or inflamed, or when there exists about them any inflammatory exudate, or any other unusual accumulation, they are less mobile, more sensitive to pain, and most comfortable when perfectly quiescent. The maintenance of the erect position, particularly during locomotion, requires alternating contractions of the different abdominal muscles to insure the equilibrium of the body. These contractions continually change the intra-abdominal (and hence intra-pelvic) pressure, thus causing more or less mass-kneading, or massage, of the pelvic contents. Under conditions of local irritation and congestion, this is not beneficial; it aggravates existing conditions. However, desirable massage may be, it must always be judiciously applied; evenly and correctly where it is required, and in varying degree, as may be needed. But the automatic massage incident to the contractions of the abdominal muscles is indiscriminate, both as to the parts affected and its duration. It is, therefore, bad under the circumstances indicated. It can only be avoided by rest in bed, with as little turning as possible, particular care being exercised to avoid tension of the belly-wall. Plain simple rest in bed, with these precautions, will, if long continued, absolutely and permanently cure many an ailment otherwise incurable, even by operation. But few patients can be induced to submit to the treatment.

Next to rest, the gynecologist has no better ally than heat applied locally, either externally by means of the poultice, spongio-pilin, or other moist appliances, or in dry form with the coil of circulating hot water, the hot salt or sand bag, or hot water bags or bottles. Or it may be applied *per vaginam* or rectum as a douche, or in dry form, if desired, with the hot water coil. The soothing effect of warm-water douches is

sometimes remarkable. They stimulate the local circulation, and promote absorption of inflammatory exudates. They relieve many pains, notably those due to uterine tenesmus.

Perhaps one of the commonest causes of wrong treatment in this class of cases is the confounding of cause and effect. Very many treat a leucorrhea with astringent vaginal applications (by douche or tablet) without an attempt to learn the origin of the ailment. Whether the cause be a simple vaginitis, or a simple endometritis, or a catarrhal state secondary to flexion or other malposition, the treatment always remains the same. A secondary leucorrhea is best treated by the removal of its cause. If this be a flexion, it should be remedied, after which the other symptoms will, in all probability, soon disappear. If due to general vascular turgescence, there is no more convenient and certain remedy, in most instances, than local depletion, and this is best accomplished by certain glycerine suppositories or medicinal tablets that are passed into the vagina, where they cause a serous exudate from the overloaded vessels, and eventually a cure.

The possibility of rectal disease simulating other intrapelvic trouble should never be overlooked. It is a good practical rule to always examine the rectum when in doubt. This commonly neglected organ has more suffering to its credit than is usually imagined. It bears close watching, and the practitioner who does not neglect it will, every now and then, succeed after others have failed. When sacral ache is not due to post-pelvic affections, it is generally caused either by uterine or rectal disease.

Time is a very essential factor in the cure of pelvic disease. Many cures cannot be hastened, and to attempt it insures longer, if not also increased, suffering. The practitioner of sound judgment knows when it is useless to attempt the hastening of recovery. He aids the *vis medicatrix naturæ* whichever way he can, knowing this to be the best. Of all errors, that one is perhaps the worst in which the physician makes needless local applications two or three times weekly. Of course, this practice is sometimes necessary, but it is bad as a routine procedure. Local treatment, here as elsewhere, must either be continuous or repeated very often; and there is probably no better form of local treatment than the douche or the vaginal tablet or suppository. This also has the additional advantage of being less expensive to the patient because less remunerative to the physician. But we should advise patients, when they consult us, in their interest, not ours. Their benefit is direct—ours should ever be only incidental.

INTRA-PELVIC MASSAGE.

The possibilities of intra-pelvic massage are only second to those of similarly applied electro-therapeutics. This is a sweeping statement, but time will assuredly confirm it. The wonderful results achieved by Thure Brandt, from 1861 onwards, never attracted the earnest attention of the profession that they deserved. His methods were practiced by others with notable success, and yet this mode of treatment was never popular. It is idle, at present, to speculate upon the probable reasons for this lack of interest in so potent a therapeutic measure, but I suspect that, were the truth known, professional jealousy would be found to be at the bottom of it, as it also was the cause of retarding the development of hypnotism and of cerebral localization. It has happened so often that great discoveries were made by minds untrammelled by conventionalities, sources from which nothing was expected, that one would suppose the world to have at last learned not to expect anything good and new from the pure and trained professional. We can recall Franklin and electricity, Morse and the telegraph, Lincoln and others in politics, Patrick Henry in patriotism, George Stevenson and the locomotive, McDowell, the country doctor, and ovariectomy, etc., *ad infinitum*. Yet we find that Franklin, seemingly forgetful of his own hard-earned laurels, actively aided in totally discrediting Messmer. The work of Gall and Spurzheim, however fallacious part of it undoubtedly was, was decried as nonsense, and was yielded as a lucrative legacy to professional mountebanks; and the labors and counsel of Brandt were lost upon those who have humanity's welfare in their keeping, and should, therefore, have builded upon the solid foundation provided by him.

General massage was also slow in gaining favor, but it vigorously crowded its way to merited recognition; its beneficence will never be denied. Why, then, the question naturally arises, should the application of the same principle within the pelvis be so long denied its proper place in medical practice? For answer, turn to the objections that are urged against it. These are mainly the danger of its leading to immoral practices. The same argument is made against all gynecologic work done by men, so that if this argument is to prevail at all, it should result in the relegation of all men from participation in the cure of the intra-pelvic diseases of woman. But the profession declines to be logical in this respect. I would suggest, therefore, the opposite alternative of the adoption of intra-pelvic massage.

Without wishing to be unnecessarily prolix, I shall call attention to some of the achievements of intra-pelvic massage. One of its most pronounced effects is the dissipation of inflammatory exudates, and the breaking up of adhesions. Its effects are gradual, but positive and permanent. Utero-fixation would very rarely, if ever, be a necessary operation after a proper course of massage.

Subinvolution and its attendant train of ills yield readily to massage, as do also passive congestions of the uterus and its adnexa. Massage, when properly applied, has an alterative effect by modifying the intra-pelvic circulation, the tendency always being toward a restoration to normal conditions.

Ovarian prolapse is remediable by massage, which restores a normal tonus to the relaxed structures that have permitted the organ to fall below its usual position, and relieves this if congested.

Uterine displacements are strikingly amenable to massage, which raises the tone of the pelvic floor and all the superimposed structures, thus gradually insuring a rectification of malpositions, and retention in normal position.

Even rectocele and cystocele have been markedly benefited by intra-pelvic massage, despite even the presence of a perineal rent. In this connection, it may not be out of place to mention a case that came under my own observation about seven years ago.

A healthy, vigorous, well-built, red-cheeked widow, 42 years of age, having dark hair streaked with gray, requested an examination for reasons that were not to her credit. She did not have what she feared, but I found a perineal rent extending to within a third of an inch of the anus. She had not had a child for eighteen years, and had met with no injury of any kind since then, nor had she ever been troubled with any pains, aches, or other symptoms attributable to intra-pelvic disease. She had neither prolapsus, version, nor flexion of the uterus, nor cystocele, nor rectocele. On the contrary, her uterus was well up and in good position, while her bladder and rectal walls were firm and in proper relation. When informed of her trouble, she was willing to be operated upon, but this I did not feel justified in advising at that time.

This case carries with it a lesson to which I desire to call attention. It is, that if, in the presence of so much damage to the pelvic floor, it is possible for all the intra-pelvic organs to retain their normal relations, and without becoming in any way diseased for eighteen years, is it not also possible to rectify many conditions attributable to perineal laceration though the

perineal body be not restored? Brandt so claimed, and a case like this one of mine gives an air of probability to his contention. Others, also, have had similar experiences. Furthermore, the bicycle, as I elsewhere state in these pages, causes moderate intra-pelvic massage, with very salutary effects, in chronic affections of the pelvic contents.

Certainly every physician fully appreciates the delicacy of this mode of treatment, in fact, too many have been inclined to magnify this fact into an insuperable objection to its practice. Upon this I have, however, already expressed myself. Even were these objectors right, their opposition could only apply with force to male physicians, not, however, to the host of able women who are now thoroughly competent practitioners of medicine, nor to women trained to give this massage, though not medical graduates.

Some women, like many men, are extremely erethetic, and the least manipulation *per vaginam* causes marked sexual erethism, and, if continued, is bound to be followed by an orgasm. In all such the massage treatment is contra-indicated, or should be vigorous enough to be so painful that sexual erethism is impossible. The presence of a third party is desirable during the treatment, especially if the manipulator is a man.

The possibilities of intra-pelvic massage in the cure of constipation due to turpitude or paresis of the rectum, and also, in the cure of a weak or dilated bladder, have not been as well developed as in the other conditions already enumerated, though seemingly even a more promising field, because more accessible to manipulation.

THE BICYCLE FOR WOMAN.

The entertaining and instructive novelist, Dr. A. Conan Doyle, has this to say in behalf of cycling:

"When the spirits are low, when the day appears dark, when work becomes monotonous, when hope seems hardly worth having, just mount a bicycle and go out for a good spin down the road, without thought of anything but the ride you are taking. I have myself ridden the bicycle most during my practice as a physician and during my work in letters. In the morning or the afternoon, before or after work, as the mood o'ertakes me, I mount the wheel and am off for a spin of a few miles up or down the road from my country place. I can only speak words of praise for the bicycle, for I believe that its use is commonly beneficial and not at all detrimental to health, except in the matter of beginners who overdo it."

To all of which I cordially assent. Nay, more; I aver that it is a boon to women. It is a stimulus without reaction, setting her upon a higher plane of health and spirits than she has been occupying. It builds up the weak, and it reduces excessive corpulency. It imparts a mental and physical vigor, and a quickness of action, that many have never previously attained. The same distance may be traversed upon a "wheel" with only a fraction of the effort required in a walk of equal length, and the time consumed is much less.

A number of Philadelphia women who have to earn their living at indoor work now get up a little earlier than usual, take a "spin" through the Park, and return in time and condition to eat a hearty rather than, as before, a perfunctory breakfast. They are then invigorated for their daily labor. Many of these go to work and return upon their wheels, with added benefit to health, and a saving of car fares. After supper, an evening ride of an hour causes a delightful sensation of rest, makes home more enjoyable than ever, and induces a sound and refreshing all-night sleep.

I know the objection offered to riding a bicycle because of female pelvic disease, or the likelihood of its being caused (?) by riding. First of all, however, let me be understood as speaking of the use, not the abuse, of this remarkable means of locomotion. The abuse of anything is to be condemned. Instead of damning the wheel *in toto* because it is abused, we should rather seek to learn its range of usefulness when judiciously employed.

It has long been a settled conviction with me, based upon long experience and wide observation, that chronic intra-pelvic trouble in women is almost invariably benefited by bicycling. I believe this to be due to a delicate massage caused by moderate riding. A split leather or even solid saddle, padded by the intervening clothing, gently, but firmly, presses upward upon the pelvic floor, while the innumerable slight contractions and relaxations of the abdominal muscles above, in balancing, produce rapid changes in intra-abdominal pressure at varying points. This alternate relaxation and contraction is conducive to a better abdominal and pelvic circulation, especially of venous blood.

Procidentia uteri, so largely dependent upon flaccid abdominal walls and a relaxed pelvic floor, is decidedly improved by the use of the bicycle. Many cases of chronic cystic trouble, as irritable bladder, are promptly and permanently relieved by this grateful exercise. I have prescribed many a wheel for old intra-pelvic trouble and for general asthenia, and always with extremely gratifying results.

However, as Dr. Doyle says, the beginner, in her delight, is apt to over-exert herself. This must be prevented. But that she is so apt to do this is no more reason why the wheel should be interdicted than that medicine should no longer be prescribed because there are thoughtless people who sometimes swallow an entire bottle of medicine on the supposition that if a part will do good the whole at once must do proportionately more good.

The beginner is sure to use a needlessly large amount of energy in holding on to the wheel, and driving it. That is cured by practice and experience. Its effects are readily and pleasantly counteracted by a short warm bath, say of five minutes, after riding. More than this it seems hardly necessary to say at present, though a volume of profitable suggestions could be written. I would simply caution those who begin to ride, or who have only ridden a short time, not to judge the necessary effort of the experienced rider by themselves, but they should rather look forward to the time when the skill of the older wheelmen (or women) becomes theirs. Then will they realize some of the truisms I have just uttered.

THE PROPER BICYCLE SADDLE FOR WOMEN.

I also desire to say a word upon the subject of saddles, and I do this fully aware of the fact that I am running counter to a widely-heralded and generally-accepted belief to the contrary. But the correctness of my position is readily demonstrated to those who have mastered the anatomy and myodynamics of the pelvic floor, and of the abdominal and pelvic cavity.

I claim, without qualification of any kind, that the so-called "anatomical saddles" are unphysiologic, and as detrimental to women as they are said to be beneficial. My reason for this, briefly, is that this kind of a saddle fails to provide a support to the pelvic floor that a woman always has except when she is at stool. The approximation of the thighs supports the perineum in the erect position. Chairs and other supports do this in sitting postures. None is required while lying down. But a woman riding a bicycle has her thighs somewhat separated at the same time that she is exercising her abdominal muscles in balancing, thus subjecting her pelvic contents to continually varying pressure from above, and to which must be added the effect of a constant succession of jolts while riding. Thus we have an increased need of perineal support at a time when it is actually and deliberately taken away. The proper saddle for this purpose is any one that fits

the perineum, buttocks, and inter-thigh space. This varies with the local peculiarities, manner of riding, and style of wheel.

Man's perineum is bulging because of the urethra and its bulbous portion, while woman's is hollow. If there is any merit in the so-called "anatomical saddle," it would be for use by men and boys for the purpose of protecting the projecting or bulging urethra from pressure. But the most experienced riders prefer the hard close-fitting saddle because of its greater comfort. I, myself, ride an iron or wooden saddle covered with thick leather in preference to any other kind, as it is the most comfortable.

Finally, in regard to the objection so often made against the use of the bicycle by women, on the ground that it stimulates sexual desire and causes an orgasm, I want to say that such a view is arrant nonsense, and almost always, if not altogether, the outgrowth of ignorance, or a sexually morbid mind. The only local effect, if any, produced by a wheel upon the sexual sensorium is a numbness from pressure incident to long riding, and to this both men and women are liable. It is usually remedied by raising the nose of the saddle, thus compelling the rider to slip further back, and rest more upon the tuber ischii, or it may be necessary to dismount and rest for a while. Diligent inquiry among women riders of all kinds during the past eight years has failed to find a single woman who was sexually excited by the wheel, until several days before this writing, and she gets an orgasm, but admits that she readily avoids it by properly adjusting her saddle.

Chapter XX.

IN CONCLUSION.

Whatever may be the final outcome of the germ theory of infection, it is advisable to use antiseptic precautions in all work, but this should not be carried to extremes, not that it hurts the patient necessarily, but because it consumes valuable time to no useful end. I find a hot five-per-cent. carbolic-acid-and-glycerine solution a good standard fluid. In long immersions or flushings it may be weakened, and for decidedly stimulating effects it may be increased in strength.

I should advise those who do this kind of work for the first time, to read up for any special operation in one, and only one, recent book. It should all be in one's head before beginning. The precaution should be adopted of having a formal consultation before the operation is fully decided upon, provided it be a grave or a difficult one, and, as an additional safeguard, some one of admitted surgical ability should be present at the operation, and if such a one is not obtainable, some leading physician should be called in for backing. After several successes, these precautions become less necessary.

Whatever work is undertaken, whether for diagnosis or treatment, should be done thoroughly. Many failures are due to carelessness upon this point, and they are always costly, to the patient at all events, and this it is our duty to avoid.

Above all other things, before giving general advice to one of these patients, her means, mode of life, surroundings and education should be accurately determined and carefully considered, for failure to do so often leads the physician to impose impossible conditions, to which many a patient will listen in silent contempt, and never return.

And finally, let me caution any one foolish enough to be inclined to take liberties with a patient, or to be insinuating, that a graver error than to yield to such inclination cannot be committed. I ignore the moral aspect of the matter entirely as being outside the scope of these pages, but give the caution from a purely business standpoint. It is almost impossible for a physician to depart, even to a slight degree, from the relation of physician and patient in his association with patients, without that departure eventually becoming known to his injury. I have a constant experience of women beginning to tell me of the familiarities of other physicians. I usually refuse to listen,

explaining that it does not interest me, and that I prefer to know nothing about it. Some of the things thus told in a few words indicate a physician's indiscreet manner or conversation, or an insinuating or thoughtless remark or manner. Sometimes it is too evidently a culpable abuse of professional confidence. Some women even manufacture lies about other men for the sake of engaging one in conversation upon sexual matters in no way related to their ailment, in the hope that it may lead to the goal of their morbid desires. The man who yields to such machination should consider that it is only a question of time, and usually a short time at that, when that experience will be detailed to some other physician in the expectation that he will prove a fresh victim.

PART II.

Common Sense
in Obstetrics.

FOREWORD.

That childbirth is a natural process goes without saying ; that most cases of labor need no extraneous aid is equally true; yet, when help is needed during this process, it may vary from the slightest requirement to the gravest emergency that can confront the practitioner of medicine. When danger does threaten the prospective mother, it often requires the promptest, most fearless, unerring, and radical relief that can be given. Her life often hangs by a thread so slender that the time for relief may be counted only by minutes, and the result means inevitable, rapid death, if the medical attendant is not equal to the occasion. Confidence in the handling of these emergencies is readily enough acquired by the patient mastering of the mechanism of labor, and the pathologic processes involved. To this may be added the subtraction of nonsense or customs and superstitions so nauseatingly prevalent in the lying-in chamber.

The obstetrician should assert himself master of all the conditions governing his case, should insist upon absolute control of every detail in reference to his patient, and maintain it, or yield the conduct of the case to some other less sensitive attendant.

One of the crying needs in this department of practice is the use of more common-sense. Obstetric practice should be stripped of its medieval trappings. The doctor should set his face hard against superstition's interference. He should have sense enough to realize, and also to insist upon, the observance of the fact that the lying-in chamber is not a burlesque, and should not be converted into a comedy show. His every act should be consistent with the conscientious realization that this is one of the most critical as well as the most painful periods in woman's natural life. He should approach his work with high ideals, a respectful regard for the welfare and feelings of his patient, and with an eye single to her own immediate and future welfare, as well as that of her prospective offspring. In other words, childbirth is not a joke, but it is one of the most serious things in life, and the doctor should ever remember that no one else is as thoroughly qualified as he is to realize this fact, and that if he has not sense enough to do this and let others see how he views the matter, they themselves are apt to make light of it, and discount his efforts in direct ratio to his own carelessness. Let him, therefore, be confident, respectful, earnest, and attentive, doing his work promptly and fearlessly, at the same time eschewing superstition, nonsense, and levity.

INTRODUCTION.

So much has been written, both in text-books and periodic literature, upon the good and sensible management of the obstetric patient, that it seems a piece of supererogation to attempt that which seems but a repetition of many previous trials, and it would be if the beaten track were to be followed. Much of that which has appeared in the past has been copied from something preceding, especially in text-book literature, while most of the articles appearing in periodicals have been taken, in the main, from standard books. But it is my aim to present the matter in a practical form, as much devoid of faddist trappings and customs of the times as is possible. In other words, I aim to suggest what I should do, or have done, under given conditions ; to state my own mode of handling these cases, and then leave others to judge whether this is or is not a justification for additional literary effort upon this subject. I may also be pardoned when I seek to strengthen the force of my advice by adding that I have never lost a patient in confinement, or as the result of one attended by myself, and this in a continuous experience of more than twenty and a half years, and despite many serious complications. Nor shall I attempt a formal paper, but shall aim, rather, to present my suggestions as *seriatim* as possible, under distinct headings for easy reference. Whenever deemed really necessary or appropriate, reasons will be given for the advice offered.

When I began this series of papers, it was my intention to say a few practical things upon the commoner subjects connected with obstetric practice. But the gratifying experience of my Gynecologic and Electricity papers was repeated. There were enough expressions of approbation, together with assurances of aid received from these informal papers, besides re-

quests that they be made to cover all or nearly all of the field, that I felt justified in continuing the series far beyond my original intention.

I aimed to avoid the didactic, and to present only the practical. How to recognize a condition, or what to do and how to do it, are the interesting questions that the busy practitioner has time to consider. It is what the publisher of *The Medical Council* aimed to give in abundance in every number. This I know to be the fact, for anything that he is not satisfied has a monetary value to the general practitioner he rejects, unless it has indirectly this value.

If, then, the stamp of practical use has been as generally put upon these papers by the mass of *Council* readers as it has by those who have written to me about them, they were not published in vain, and it is to be hoped that the space given them by the publisher, and the time consumed in their perusal by the practitioner, will not have been wasted.

Chapter I.

REQUISITES TO SUCCESS IN OBSTETRIC PRACTICE.

Brief reference has already been made to the importance of obstetric practice. Occasional deaths occur, forming but a small mortality estimated in percentage, but constituting a severe indictment of the profession for neglect to thoroughly master the practice of its most important department. In twenty and one-half years' experience I have never lost a woman or child in confinement, except two children who had been dead for a long enough time before delivery to be in a state of maceration at birth, and one due to concealed hemorrhage. Within a period of five years I made post-mortem examinations of the bodies of from thirty to forty women who died in childbed, in every one of whom death was avoidable with the exercise of ordinary care! They were due to delayed assistance, the excessive use of ergot, septic fever, and hemorrhage. The principal cause of neglect was hurry on the part of the physician, or ignorance of the attendant, either physician or midwife.

These simple facts form a terrible arraignment, but its use in this connection is not, however, to insinuate that all deaths in childbirth are preventable, for this misfortune has occurred in the hands of the wisest and most expert obstetricians. The matter is introduced to help impress upon the practitioner the importance of a thorough knowledge of obstetrics, and the necessity of its scrupulously careful application.

In the first place, it is necessary to thoroughly examine the patient with regard to the condition of the parturient canal, including its dimensions, freedom from obstruction, consistency of its soft parts, moisture, swelling, rectal and vesical contents, and any other thing relating to the passage of the child. It is next requisite to determine the condition of the child, its presenting parts, its posture, its size, and the part of the canal with which it is related. The state of the mother must be also noted as to local and general conditions. Locally, the degree and efficiency of contraction are of prime importance, and particularly the proportion of pain to the degree of contraction. The pulse, as to frequency, tension, rhythm, and volume indicates her power of endurance. Her color, cutaneous moisture, and temperature indicate the extent to which she has thus far succumbed to the strain.

Reasonable regard must be had for the *vis medicatrix nature*, but while it is bad practice to go to the extreme of using the forceps in nearly every case, it is also a serious error to leave the delivery of the child in the hands of nature if the patient's strength is yielding. Good judgment is also required in the use of remedies to still uterine contractions if they result in "nagging pains," and in the use of chloroform to mitigate the torturing pains of delivery.

It is clearly the duty of every man who aspires to obstetric practice, that he should be fully qualified to do his work, and this means anything that may be required to lessen the suffering or save the life of the patient or her child. Many a woman has perished prematurely in childbed because of the ignorance or cowardice of her attendant.

The obstetrician should come prepared to control hemorrhage, to relieve shock or sudden heart-failure, to enter the abdominal cavity, and to do numerous other emergency acts for the doing of which there is not time to send for the "Professor." Life upon life is annually sacrificed to this custom of delay in sending for consultants to do what every one should feel himself fully qualified to do before he engages to "confine" a patient. Every practitioner, presumably, knows the armamentarium requisite to this end. The most essential equipment, however, is carried in the head. Underlying it all is a thorough mastery of the anatomy of the abdomen and pelvis and their contents, and of the perineum. To this must be added an equally clear conception of the mechanism of labor, simple and complicated. And this should be supplemented with good knowledge of pathologic processes, both local and general. Thus equipped, the obstetrician is still at fault if he is devoid of that sublime moral courage that yields perfect confidence when it is most required. He should feel it within himself, and reflect it from his face into the soul of his patient. Even such a paragon of excellence is liable to humiliating and even tragic failure if he be careless or over-confident. Real success can only crown the competent practitioner if he is conscientious and painstaking in his examination of the patient and the conduct of the case.

PERSONAL FACTORS.

What to do and what not to do, in minor matters, often cause perplexity, sometimes more than other matters of seeming greater import. But it is in the minor things that the patient usually has a preference, and in which she does not like to be balked. The same is true of interested relatives and

friends. There often are patients who dread certain things about their condition, or even all of it, while there are others who are perfectly stoical. Now, these are radically different classes, and it will not do to handle both alike. The psychic factors in our patients are as important as are the physic, and sometimes much more so. We must study them, and act accordingly. Never make the blunder of trying to laugh off the fears of a morbid woman, but treat her seriously and considerately. It is more gratifying and reassuring to her, and will inspire her with confidence in you. Raillery would only serve to undermine what confidence she might have had, would increase her mistrust, and only add to her fears.

Then as to our own personal factors. They are also important. Above all, let us never attempt that which we feel that we are unable to do, for the matter may be too serious to be trifled with. The physician should control himself, especially in a dangerous emergency, when the clear-headedness of surrounding friends are necessary to a successful issue. To proclaim the great danger by the expression of one's own visage is puerile and unbecoming a practitioner of medicine. If the physician becomes and looks anxious, the friends get alarmed, and the patient receives a shock from them in turn, thus adding to her danger because lessening her resisting power. I once knew a very sensible man who, although he had a pair of forceps, did not use them for a long time because, as he said, he had never seen a pair used, had never tried it himself, did not know how, and would not endanger the patient trying to learn. I used them for him three times before he felt confidence in himself, and I know that he used them well the first time he tried, for I saw him do it.

PRELIMINARY PERIOD.

When first engaged to attend a woman in confinement, charge a retainer fee, say of five dollars, whenever possible. This secures the case to you, and insures medical attendance to her at her time of greatest need. If called to a strange case during labor, inquire about your fee before beginning work, for you will too often do so in vain afterwards. Be charitable willingly when necessary, but be not needlessly so. Offer to examine the patient if she engages you in advance, with a view to learning if there is anything abnormal. But if she objects, do not insist. If she makes no complaint indicating special trouble, leave her alone—don't bother her. But you may caution her against headaches and bleeding, and urge her to let you know, should she become so affected

Insure to her, as well as you can, good appetite and digestion, with free elimination. For your own benefit, tell her to send for you at once upon the first sign of commencing labor during the waking hours of the twenty-four, but to delay calling on you during the night until labor is in full progress. This plan prevents many night calls at the same time that it avoids the occasional loss of a case by day. To the objection that by delay at night a serious condition may be made worse, I have only to add that it has not been so in my experience, and that it is not likely to be so in that of others if they follow my rule with some judgment. When there is reason to suspect trouble requiring prompt attention, the patient should be enjoined to send for aid at once upon the beginning of labor at any time of the day or night.

APPROACHING THE PATIENT.

It is always well to realize the fact that one is not sent for to attend a woman in confinement so that one may talk to her upon the state of the weather and other trite subjects, but that we come to help her out of a painful difficulty, on which account it is best to be the doctor from the very beginning rather than an old woman or a gossiping girl for an introductory period. Get to business at once. See that water, soap, and towels are at hand; that the patient has had, or soon will have, a stool; inquire into her general condition; ascertain the beginning and progress of her pains; and then examine her *per vaginam*. Backward women would better have the initial examination made during a pain, though one should not wait for this if the intervals are long. The sooner one gets to work, the better.

Chapter II.

DIAGNOSIS OF PREGNANCY.

EARLY DIAGNOSIS OF PREGNANCY.

It is often desirable to know at a very early period whether pregnancy exists or not. How to determine this with absolute certainty is an unsolved problem, many to the contrary nevertheless. One after another have the absolutely positive signs of early pregnancy been loudly heralded, only to be found delusive after trial. The most marked symptom is the cessation of the menses, though this is not in itself more than presumptive evidence, for the menstrual flow may be absent without impregnation, and it may continue during this condition. I have noticed this many times, as, no doubt, have the majority of other physicians.

Morning sickness is a misnomer because the nausea may exist at any time, or be constant, though it is also entirely absent in many cases. It is commonest, however, in mild form after rising, ending soon after the rejection of breakfast. It is most usually met with from the second to the fourth month.

The facies of pregnancy is somewhat characteristic, and more perceptible to some than to others. There are some lay people who usually detect pregnancy in its earliest weeks by the facial expression. What this is has been difficult for me to satisfy myself, but it appears to be a peculiar staring introspective expression of the eyes.

Mammary changes begin in the second month, and consist of enlargement and tenderness, with a lumpy feeling, a darkening of the areola, and the enlargement of the tubercles of Montgomery, though the secondary areola does not appear until the fifth month. The areolar pigmentation is of little import except in primiparæ. Abdominal fullness is experienced by many out of all proportion to the moderate enlargement of the uterus.

One of the very best signs of pregnancy in the earlier months is the turgescence of the vulvo-vaginal vessels, and the increased secretion of mucus. To these signs may be added the gradual symmetric enlargement of the uterus, and the softness of the cervix.

LATER DIAGNOSIS OF PREGNANCY.

About the middle of pregnancy, the fetal movements become manifest, and, shortly after, the fetal heart-sounds may be heard under favorable conditions. Just before this, the rebound of the fetus may be felt after its having been suddenly pushed away from the anterior uterine wall, just above the cervix, by the finger in the vagina, this being the sign called *ballottement*. From this time on, the mounting of the uterus into the belly, and the projection of the umbilicus, together with the possibility of outlining the fetus during the last two months, and the rhythmic contractions of the uterus, constitute a symptom-group that should make a positive diagnosis easy. It is only when free access to the patient is denied that a positive diagnosis is impossible, or, at least, difficult.

EXTERNAL PALPATION.

There are times when careful palpation of the mother's abdominal wall yields information at the time denied *per vaginam*. This is so in the smaller pelves, especially to examiners with short fingers, at the beginning of labor. But, in most cases, it is easy for the majority of physicians to determine, at the very beginning of labor, whether the head is the presenting part or not, by digital touch through the anterior uterine wall *per vaginam*. A thin belly-wall is the ideal for palpation; and it is, of course, only attempted when the uterus is relaxed. The head is readily outlined, both because of its globular form and hardness, wherever it may be situated. In occipito-anterior cases, which largely predominate, the uniformly resisting back extends from the location of the globular head, and is separated from it by an interval corresponding to the neck. In occipito-posterior cases, however, the head is not so hard nor so smooth as in the anterior cases, because the face is softer and irregular, while the firm, rounded, even back is replaced by the folded arms and drawn-up knees, legs, and feet. A smooth anterior outline, therefore, indicates an occipito-anterior position, while an irregular outline of varied consistency denotes an occipito-posterior case.

PELVIMETRY.

It has always seemed to me that the real value of pelvimetry was not well enough emphasized. I rarely make use of it, for the reason that I do not need it. A physician with very short fingers is often at a disadvantage in estimating the size of a pelvis, and yet it may also be said that a pelvis large enough to prevent spanning by a short-fingered man is not too

small to permit the passage of the child. But it is a satisfaction to know just how large the cavity is, and, under such circumstances, the short-fingered practitioner can help himself with external measurements. These should be from 9 to 11 inches between the anterior superior iliac spines, 10 to 11 between the highest points of the iliac crests, 11 to 12 between the great trochanters, and at least $7\frac{1}{2}$ between the symphysis pubis and the lumbo-sacral junction. But all these measurements are not an absolutely certain index of a correspondingly proportioned pelvic cavity.

The more fortunate longer-fingered obstetrician passes two fingers within the vagina, and sweeps them about in estimation of the size of the canal. The tip of the middle finger readily touches the sacral promontory, while the edge of the palm abutting against the pubes is marked with a finger of the disengaged hand, and the distance between the two points ought to be 5 inches or more. Sometimes the sacral promontory cannot be reached, in which event there need be no fear, except for a precipitated labor with danger of laceration. Sometimes the fetal head gets so jammed in the superior strait that the conjugate cannot be well estimated. It is then that the external measurement is of service; and, be it remembered, the sacro-pubic measurement is a better index of the corresponding diameter than are any of the others.

THE IMPORTANCE OF PELVIMETRY IN OBSTETRIC PRACTICE.

Nature has so planned that the normal woman can give birth to her children without unusual difficulty. However, there are many cases in which the mother is not perfectly formed. The ordinary course is that this fact is not discovered until actual difficulty is experienced in delivering her of her child. A large proportion of the fatalities to mother and child come from this preventable malpractice.

Young ladies do not have a diagnosis made of their pelvic capacity when contemplating marriage. If they did, perhaps some of them would decide not to risk the possible dangers of dystocia. However, when the young wife finds herself pregnant, and engages her attendant, it becomes his duty to ascertain, as closely as possible, what her chances are for normal delivery.

One of the important elements in this prognosis consists in a knowledge of her various pelvic diameters. These are approximately gained by pelvimetry when the young woman objects to vaginal examination. The normal diameters (without abnormal fetal proportions) prognosticate normal delivery so

far as the bony canal is concerned. A certain degree of contraction of any diameter indicates difficult, but not necessarily impossible, natural delivery. A due allowance can be made for nature's reserve forces, and for such aid as careful manipulation, Walcher's position (practically increasing the antero-posterior diameter at the inlet nearly one inch), the extreme lithotomy position (for increasing the conjugate diameter at the outlet), and the forceps. A further degree of contraction will reveal the impossibility of natural delivery, but will indicate that symphysiotomy will be sufficient to correct the disproportion. The physician can then make his plans accordingly.

However, a degree of contraction may be found to exist which will absolutely prevent delivery by the natural outlet. The choice then is between early induced abortion, and abdominal delivery at term, with the chances of a living child which that operation offers.

This in primiparæ.

When called to a woman who has a history of previous pregnancies with difficult labors and dead children, a correct measurement of the pelvis may show where the difficulty lies, and how it can be remedied.

Measuring the pelvis is an extremely simple and easy operation, takes but a few moments, and the external measurements (generally all that are necessary) can be taken without undue exposure of the patient.

Chapter III.

THE CARE OF PREGNANT WOMEN.

While no one can deny the dangers of the pregnant state, there are, nevertheless, many who sneer at those who advocate the keeping of pregnant women under medical observation. They look upon it as a waste of time, and this it certainly seems to be in most instances. But so is the attendance of the physician upon a case of labor. As a rule, he is not needed. But we never know when he will be needed. Life insurance is not needed by most of the insured, and it does not seem as if it would be to the healthy individuals who, only, can get insurance. Yet that is no reason why this protection should be declined. It is precisely because we can never tell when the pregnant woman may need attention that it is the duty of the family physician to keep her under his watchful eye. As soon as he knows that one of his patients is pregnant, he should visit, or send for, her, and explain the dangers of the condition, and the import of certain well-known symptoms, such as headache, edema, bloody flow, and the effects of extraneous influences, say like jolting rides. The urine should be occasionally examined, and a careful physical exploration would best be made if the physician is not already familiar with the pelvis of his patient. Within sixty days of the expected confinement, the position of the child should be determined.

Because the procedure is unusual, it is generally opposed by the public. Nor is the medical man always satisfied that all this trouble (?) should be taken. But the opposition of the masses to this practice is due to ignorance, fostered by the indifference of practitioners. The desire to let "well enough" alone is also the cause of much septic trouble in childbed cases. When an old woman, officiating as nurse, peremptorily and arbitrarily tosses some dirty old rags on the bed in response to the doctor's call for some cloths, many a timid man accepts the offering with a hesitating conscience, rather than invoke the hardships of a loosened tongue, grown active with practice.

It is the same combination of timidity and a failure to realize the importance of the most ordinary safeguards, and simply because they are new, that not only permits much slipshod work to still be done, but that does nothing to educate the people to a higher standard of carefulness and cleanliness.

FEEDING DURING GESTATION.

The disproportion between the size of the full-term fetus and the maternal soft parts through which it passes during birth is so great, that the prospective mother can hardly credit the truth when informed of the fact for the first time. That children should be born so very large transcends comprehension when one attempts to reconcile all things natural as being for the best just as they are. Many mothers are seriously damaged, and some killed, by this disproportion. For ages, it has been the effort of learned physicians, as well as of unlearned schemers, to reduce the size of the fetus. It has even been seriously proposed, and that not so long ago, to force delivery at the end of the eighth month, so as to secure a less difficult labor. This desire to ease the pains of labor by reduction of the size of the fetus has been a profitable source of revenue to the quack for ages, and it is a source of revenue to the abortionist because of the dread of labor-pain as well as of the after-care of the child.

Of all schemes to reduce the volume of the fetus *in utero*, that has probably been the most widely accepted and practiced which seeks this object by regulation of the food of the pregnant mother. Now, while I do not desire to be understood as denying that there may be something in this, I, nevertheless, have looked in vain for a rational explanation of the theory. The main idea is to minimize the bone formation of the fetus by withholding such foods as make bone. It would, perhaps, be more accurate to say such foods as are claimed to make bone, for the tissues are not made by special kinds of food. The essential idea to recollect is that tissues are made from blood, and this from digested and absorbed food. The circulating blood offers substantially the same pabulum to the tissue cells, whether the food be this or that, so long as it is adequate to properly sustain life.

If there is deficient bone formation, we give our patients a few grains of lime salts per day, collect our fee, and flatter ourselves that we have really done something to be pleased about. True, for the time being, we have satisfied our patient, and our conscience is easy. But if this small addition to the supply of lime salts taken with our food will cure rickets and osteomalachia, why would not a slight increase in foods rich in these salts do the same? If this is really a fact, can we, in any way, hope to withhold from the fetus its share of lime salts by stinting the mother? It does not seem reasonable.

Again, many women lose their teeth during pregnancy,

though at all other times devoid of dental trouble. We know this to be a fact. This is supposed to be due to the strain of the child's demand for lime salts upon the mother. If this is true, how can we seriously affect the fetus by dieting the mother without injuring her? In the one instance we expect the daily addition of a small amount of lime salts to do wonders, while in the other we expect to bone starve the fetus despite the fact that it is living off its mother's blood, even at the cost of her teeth.

We must conclude that the chemic theory is insupportable. From a biologic standpoint, however, one sees a ray of hope. We know that cellular activity is modified by various extraneous influences, such as the effect of opium in dulling sensibility to pain, of castor oil upon the enteric cells, of ergot upon non-striated muscles, of podophyllin upon the liver, and so on through a long list. The how and the wherefore we know not. Experience has also abundantly shown that the same kinds of food have various effects upon different people. Why a natural food should have a different effect than a chemic substitute theoretically the same, we can only surmise, but we do not know. We have undoubtedly acquired a great many facts about food, and its digestion and absorption, but we do not understand them. It would seem preposterous, therefore, to assume that any food regulation of the mother could specifically affect the nourishment and building up of any special tissue of her fetus *in utero*.

What causes the deficient appropriation of lime salts in rickets, what their phenomenal loss in osteo-malachia, despite dieting and medication? What is the most uniform accompaniment of effective treatment in these conditions? Anything that builds up, is the correct reply. The osteoblasts, or bone-cells, are the makers of bone. It falls to their lot to abstract lime salts from the blood, and deposit them round about them in proper order to form true bone. Build them up so that they can do their work, and the salts are appropriated by them from the passing blood, and bone-tissue formation proceeds as it should. The same is true in allied diseases.

Show me, then, how to so modify the mother's blood that the bone-cells of the fetus are made unable to do their work, and there will result a rickety fetus, in all probability to worry its parents in after-life. If the growth of the fetus is to be at all modified in its bone-formation, I strongly suspect that it is only possible by attacking the integrity of the bone-cell, and this is a much more deplorable occurrence than perineal laceration or a labor prolonged by several hours. I believe that

there is no woman worthy of the designation "mother" who would not prefer, if necessary, accentuated and longer suffering for the purpose of insuring healthy, well-formed, offspring. It is possible that we may some day learn of substances that directly modify the activity of bone-cells. Could we find an agent that would inhibit their action before birth, and another that could stimulate them after birth, so much of the problem of easier labors would be satisfactorily solved. But so long as the mother's digestive organs extract from her food-supply sufficient to give her blood of good quality, the fetus *in utero* remains as, or even more, unapproachable by maternal dieting as before conception.

THE BICYCLE AND PARTURITION.

About three years ago, it was my unpleasant experience to attend a 30-year-old primipara, who, though a large woman, had a contracted pelvic outlet. She had a very large child, weighing twelve pounds, though not a fat baby. The head was so tightly wedged in the pelvis that forceps could only be applied with great care and trouble. The birth was a difficult one, resulting in a perineal rent extending to the anus.

It occurred to me at the time, that this complication might have been avoided had this patient ridden a bicycle in her girlhood. I now refer to the old-fashioned saddle that fits up between the tuber ischii. Before puberty, and for some time afterward, these lowermost portions of the innominate bones are capable of gradual divergence, though to what extent only experience can tell. The saddle, acting as a comfortable wide wedge between the ischii, gently presses these apart by means of the super-imposed weight of the trunk, shoulders, and head.

In view of the steady use of the wheel, its influence upon the form of the pelvic outlet in woman must become manifest within another generation. It may, in fact, show decided results within a decade. Now, however, is the time to begin our observations. The distance between the ischial tuberosities is approximately determinable, even in stout children. Mothers would readily enough make the necessary measurements at a physician's suggestion. This should be done at intervals, so that comparisons could be made. A double set of observations are preferable, one upon riders and another upon non-riders.

If, besides its other many beneficial features, the bicycle could also be credited with lessening the duration and pangs of childbirth in many women otherwise destined to hard labors, it would be an additional reason for its use in young girls, especially those with narrow pelves.

Chapter IV.

PREPARATION FOR LABOR.

PREPARATION OF PATIENT AND BED.

The preparation of the patient and her bed affects her comfort and safety, as well as the convenience of her physician, nurse, and family. The rubber pad with the inflated rim should be used wherever possible, because of its cleanliness and convenience; it saves the bed and washing. A large sponge is always convenient for soaking up the expelled liquids, and cleansing the patient, for the rubber pad, while it keeps these off the bed, does not carry them off by its sleeve, because of the sagging of the pad under the patient, thus throwing the mouth of the sleeve above the level of the liquid. I know that a firm foundation under the patient will avoid this, especially if the patient is placed across the bed in the lithotomy position, but this is by no means always conveniently practicable. Nor is it best to subject all women in private practice to the same routine, for that which is unobjectionable and appropriate to the one is sometimes the opposite in the case of another. In the absence of the rubber pad, a rubber cloth, or a padding of newspapers, may be substituted under a clean sheet. Both are impervious to blood.

DRUGS.

Chloroform, to each ounce of which two drops of nitrite of amyl have been added, is useful to lessen the pains of labor, and to subdue convulsions. The addition of the amyl nitrite guards against the lethal effect of the anesthetic.

While I seldom use the fluid extract of ergot, I am rarely without it. None but a reliable make should be employed, and I invariably supply or order one make that I have always used and found efficient, but it is more expensive than the ordinary kind. I also use the sulphate of quinine in five-grain gelatine-coated pills, or in smaller ones so that I can give it in doses of 5, 10, or 15 grains. Other medicinal oxytocics I cannot now recollect ever having had occasion to use.

A good fluid extract of *veratrum viride* is worth keeping on hand for the control of puerperal convulsions. It is the most efficient remedy, when properly applied, that we have for this purpose.

Of the various antiseptics, I have long preferred creolin for its many superior qualities. It is cheap and efficient, and has a distinctive odor and a milky appearance when mixed with water. I like it better than any other agent of the kind I have previously used. Latterly I have also used lysol with much satisfaction, and sometimes formalin. In emergency, vinegar is a good substitute, and may be had at all times in almost any household. The bichloride of mercury is objectionable because it is odorless, tasteless, and colorless, besides coagulating the mucus, thus preventing full penetration to underlying parts. Carbolic acid is objectionable because not miscible directly with water, for it floats upon this in small globules unless first combined with glycerine.

Other drugs and implements may be carried to a confinement, but the above is what I usually carry along. Sometimes I take less, and at other times more. In country practice, where it is more difficult than in the city to return to the office for a forgotten article, and where there is no neighboring pharmacist, it is better to carry such additional things, especially in the drug line, as may be needed under almost all contingencies.

IMPLEMENTS.

What the physician should take with him when summoned to a woman in confinement, is a variable question, depending upon her proximity to his office, his actual knowledge of her condition, and his method of work, and his capability for doing it. He would better leave at home all those things which he may possess, but which he knows not how to use, or cannot use properly. A good mind, well trained, together with decision, promptness of execution, and a steady nerve, constitute the best equipment. By their means are other ways devised from material ready at hand to serve a needy purpose in emergency. An extensive armamentarium in the hands of an incapable only adds to the danger of the patient. It becomes, therefore, the duty of the obstetrician, first of all, to make himself a master of the art he would practice, for proficiency in early diagnosis is the best safeguard of the patient.

The actual implements should comprise a hypodermic syringe, for this may be needed in any case. Forceps need not be carried in city practice, unless at night, or when far from the office, but should, preferably, be of the pattern to which the operator is accustomed. There is much nonsense about the large variety of forceps, for a skilled operator is not so much troubled about the variations of an eighth or a quarter inch in the shape or dimensions of the instrument as their different de-

signs would seem to imply. While a long pair of forceps is somewhat bulky and heavy for work at the outlet, they can very well be used there, to me, at least, with less trouble than the carrying of an extra pair. An all-metal implement is the preferable one because it is cleaner; and, with aluminum handles, they are also lighter. I prefer the hooked handle, like the Hodge pattern, because of its added usefulness.

A strong curved needle, together with a suitable suture, should be the obstetrician's accompaniment, or it ought, at least, be readily accessible. I prefer the peculiar double-curved Papine needle, and the worm-gut suture. They will serve equally well for either abdominal or perineal work. That the useful little pocket-case should also ever be at hand need only be mentioned, for with it and the needle and suture an emergency abdominal operation can readily be done.

I prefer a soft rubber or silk catheter to the metallic one, but one of some kind may be needed at any time in any case. Sometimes the distended bladder is paralyzed and impedes labor, or it may become full and paralyzed after labor.

Some ligature for the umbilical cord should be kept on hand, though some practitioners do not tie the cord at all. But I have never been willing to risk this, particularly since I had my only case of umbilical bleeding that I can recall. Ordinary strands of thread make a good ligature. With the patented rubber-band ligature I have had no experience, though it would seem to be the most elegant and efficient of all, certainly better than the metallic clamp.

A catheter with a wire stylet is seldom needed, but when it is, it may be the means of saving the child's life. I refer to cases of prolapse of the cord. For this reason alone it should have a constant place in the obstetric bag.

AVOIDANCE OF ROUTINE.

We cannot be too strongly impressed with the fact that there is a wide difference between women in childbirth, even the same woman often showing much difference in her various parturitions. It does not do, therefore, to treat them all alike. Personal idiosyncrasy, surroundings, and means should all tend to modify our plan of action. It requires very little judgment to follow a uniform rule of practice in all cases, though it may occasionally cause much damage; but it needs nice discrimination—is, in fact, an art—to modify one's treatment according to the needs and conditions of each case.

Chapter V.

THE DISEASES OF PREGNANCY.

The diseases of pregnancy are many, and to do justice to them all would require a large work; in fact, a good book upon this subject, giving practical advice as to prevention, diagnosis, and treatment, would be a large book and a most valuable one. My aim now is only to consider several of these in a brief manner. Nearly all the acute infections and eruptive diseases cause a large percentage of abortions, and they do not, usually, give the child immunity if expulsion is late enough to yield one that lives. If the mother has scarlatina, her child may have it *in utero*, even to the extent of shedding its skin. I recall a case of measles in a woman, eight months pregnant, who gave birth to her child on the second day of the eruption, the disease appearing in the child on the eleventh day after labor. Many cases do not abort because they end fatally before there is time for expulsion of the embryo or fetus. A premature expulsion of the uterine contents largely increases the danger in infectious diseases, such, for instance, as diphtheria.

UTERINE MALFORMATIONS.

When it is remembered that the uterus is developed by the junction of two adjacent tubes forming a Y-shaped union, of which the coalesced portions form the stem, and the separated portions the arms, and that these latter subsequently become the Fallopian tubes, while the united portion develops into the uterus above and the vagina below, all the malformations that may result from arrest of development at any of its stages may readily be imagined. If the septum formed by the junction of the two tubes is not absorbed, there results a double uterus and a double vagina, or either one of these alone, according to circumstances. If the tubes only unite at their lower portions, there may be a single or double os with a two-horned uterus, and if one of the non-coalesced tubes does not continue to develop, there results a single-horned uterus (*unicornis*). These anomalies may give rise to errors in diagnosis. Thus I once had a case two months pregnant, about nineteen years ago, in which menstruation was not interrupted, but in which it was lessened in amount. The uterine probe passed readily up to

the fundus uteri, though somewhat to one side. There was a perceptible enlargement upon the opposite side, and this, as it was tender, was attributed to an inflammatory exudate. Time, however, proved the tumefaction to be within the limits of normal physiology, for a full-term child was born in seven months. The bicornate character of the uterus was subsequently established with ease. When impregnation takes place in a horn that is underdeveloped, it may rupture. Such a condition may readily be mistaken for tubal pregnancy, both before and after rupture. But an exact diagnosis is immaterial, because the treatment is the same in either instance.

UTERINE DISPLACEMENTS.

Displacements of the uterus may be downward, forward, or backward, and may exist before pregnancy, and may arise during this condition and because of it. The most troublesome is backward displacement.

Falling of the uterus (prolapsus, procedentia) carries with it the anterior vaginal wall and part of the bladder. If not checked, it ends in abortion. The proper remedy is a soft-rubber ring support or a hollow inflated pessary, together with a vulvar pad held in place with a T-bandage. This condition is confined almost entirely to multipara, and is usually due to a lacerated perineum. The only real remedy is restoration of the perineal body, which may, however, be deferred until after the prospective labor.

Forward displacement, though normal to a slight degree in the early months of pregnancy, may be so marked as to cause vesical pressure symptoms, as shown by frequent hasty urination accompanied by more or less hypogastric pain and ardor urinæ. The best treatment is often not satisfactory, and consists in the wearing of a suitable anterior uterine intra-vaginal support—say a Thomas anteversion pessary—or tampons of oakum, the latter being preferable to cotton because of its greater elasticity and lesser liability to become matted, on which account it does its work better and is longer retained. Should the larger uterus in advanced pregnancy push forward the belly-wall so as to threaten to become pendulous and separate the recti muscles, a suitable abdominal support should be worn.

Backward displacement is a serious condition in pregnancy, especially if overlooked. Hardly any other condition shows so clearly the necessity for a vaginal examination if there is complaint of pain in the pelvic region during pregnancy—a condition that is easily relieved and kept so, when

taken early, presents many difficulties, and is associated with much suffering, if allowed to continue. It may have existed before pregnancy, with or without flexion, or it may arise because of this condition. A mobile uterus with a top-heavy fundus readily tilts backward, particularly if it is low down in the pelvis, and the distended bladder presses backward. In small pelvis, it is forced down by the sacral promontory. As enlargement continues, the cervix presses against the base of the bladder and vesical neck, thus causing annoying bladder symptoms, either of retention and dysuria from compression of the vesical neck by the cervix uteri, or of frequent and hasty micturition due to irritation of the vesical neck if the pressure is insufficient to cause retention.

The compression of the rectum by the fundus causes difficult defecation or constipation. The recto-vesical complications cause hypogastric and sacral pains, and there is constant bearing-down pain because of the anomalous and irritating relation of the pelvic contents, steadily growing worse because of the increasing size of the offending body. Vomiting may be very frequent and severe, for all of the causes of reflex vomiting are intensified.

Sometimes there is spontaneous replacement of the uterus, a fortunate circumstance for the patient as well as for the hapless physician who may be in attendance and fail to recognize the trouble, or the uterus may gradually grow up into the belly with a pouch or bay window projecting into the sacral hollow under the promontory. Or, and this is most likely, the difficulties increase until there is an abortion, and if this result does not follow with sufficient promptness, the retained urine due to compression of the vesical neck may push the bladder well up into the belly, and the back pressure of urine may set up secondary kidney disease. There may even be sloughing of the vesical base and intervening vaginal wall, with a fatal outcome. The uterine circulation may become cut off through pressure and bending (kinking) of its bloodvessels, thus causing the death of its contents, and sloughing. If not ending in the death of the patient, the condition may result in septic abscesses of the pelvis, and chronic invalidism of the unfortunate woman whose condition at one time was as capable of prompt and certain and permanent relief as any to which a physician is ever called.

There should be no difficulty in the diagnosis of this condition. The globular uterine mass is readily felt in the sacral hollow, while the cervix is high up behind the pubes. The bladder must be thoroughly emptied with a catheter, and if

this is not practicable because of clogging of the bladder, this viscus must be emptied from above by aspiration. The rectum and sigmoid must also be emptied, by enema if possible, but otherwise by siphon. For this purpose a rectal tube is passed into the anus for about 10 or 12 inches. It is connected with a rubber tube or funnel. Water is then poured into this while held above the body of the patient. Afterward this is lowered to a point below the patient, and the water and enteric contents permitted to pass out. The process is repeated, if requisite.

The patient should now be placed in the knee-chest position, and the fundus pushed past the sacral promontory, but on one side—preferably the right side, because of the presence of the rectum on the left. Two fingers should be passed in for this purpose, and more if necessary. This procedure is usually very painful. If too much so, which is the rule, but depends upon the stage of pregnancy and consequent jamming of the uterus, an anesthetic must be given. Gradual pressure with a rubber bag in the vagina back of the uterus succeeds when other means fail, or this hydrostatic pressure may still more effectively be made from the rectum. It is sometimes advisable to draw down the cervix with a vulsella forceps.

All means failing to effect replacement, and marked symptoms remaining, it is proper to empty the uterus. This should be done *per os*, if possible, and if this fails the liquor amnii may be drained by puncture through the posterior vaginal and uterine walls, after which the fetus will follow *per os*. If necessary, removal should be effected by the abdominal route.

LEUCORRHEA AND HYDRORRHEA.

Leucorrhœa, so common aside from pregnancy, is often found in gravid women because of this condition. This is not at all strange in view of the increased hyperemia of the parts, due to increased functional activity, and the added vascular turgescence caused by pressure. This would naturally involve a freer vaginal discharge than is usual in the non-pregnant state. The extent of the increase would depend upon the local vascular tone and the general health of the patient. In proportion as the local tone and general health excel, the vaginal flow will show nothing unusual. It may also be due to the other influences active at all times independent of pregnancy, and, if any of these exist, they are aggravated by the changed condition of the patient, and are, therefore, less responsive to treatment which does not differ essentially from the treatment

at other times. The key to successful treatment of any condition in pregnancy is to keep the patient in the best general health attainable.

Hydorrhea during pregnancy consists of a profuse watery discharge from the vagina, or, rather, uterus. It is not uncommon, and sometimes is so marked near the end of gestation as to lead to the belief that a dry labor is inevitable. The only tenable explanation of the phenomena is the supposition that there are pockets of liquid between the layers of the fetal sac, which rupture at different times and discharge their contents. There may be one large extra sac that ruptures at the beginning of labor because unable to withstand the pressure due to the intermittent contractions of the uterus. If this theory is right, there is always danger of the premature rupture of the membranes, for they must be weakened at the point of rupture of the extra sac. I have found, too, that this is what occurs in many of these cases, perhaps in half of them. The only remedy is to keep the patient as quiet as possible for several days after the passage of the water, in the hope that the formerly separated layers of the fetal sac may unite, thus lessening the danger of premature rupture during labor.

EDEMA.

Edema is quite common in pregnancy, especially about the ankles, and is, presumably, due to pressure of the uterus against the iliac veins, thus adding to the intravenous pressure below, with consequent transudation of some of the watery constituents of the blood within the surrounding loose connective tissue. This form has no special significance other than its indicating weak vessel-walls about the ankle, or unusually lax connective tissue, or both. The treatment, should the swelling be annoying or painful, is an occasional posture of the patient on hands and knees, with, at other times, elevation of the feet, and an elastic (flannel or rubber) bandage about the swollen parts. The knee-hand position is to let the uterus fall away from the iliac veins.

When the edema becomes extensive, passing up the leg and thigh, even implicating the vulva, the cause is more than simple pressure. It then indicates either heart or kidney disease, or both. Whatever the exact conditions of these organs, there is associated a condition of high blood-pressure that practically duplicates, in a general way, the local condition at the ankles in the ordinary limited pressure edema. The first indication is to correct the circulatory disturbance in a rational manner. If the heart's action is deficient, this must be rectified

with the proper remedies in suitable amount. A labored heart is thus often relieved by the combined use of digitalis and glonoin, both strengthening this organ, while the latter removes the obstruction forward due to high arterial tension, by relaxing the bloodvessels. Both act similarly in renal disturbances causing edema. But this should, by no means, be adopted as a routine treatment. Sometimes it is not needed. If the heart is already acting vigorously, and pushing the blood along at a violent rate, it must be quieted, and there is nothing better for this purpose, both for promptness and certainty, than *veratrum viride*, or its alkaloid, *veratrine*. The fluid extract may be given by the mouth in 2 or 3 drop doses every half hour until effective, or the alkaloid may be given as often in 1-60 grain doses. The tincture of *aconite* may also be used for this purpose, being given in single drop doses every fifteen minutes after an initial dose of 5 drops.

It must not be forgotten that edema is but a symptom, and that its proper treatment consists in the alleviation of the condition that causes it. That involves the careful treatment of the heart or kidneys, and the frequent examination of the urine. Headaches must also be watched for as a prodrome of serious trouble, possibly of albuminuria and convulsions.

THE HEART.

Pregnancy is a strain upon the heart, in response to which the left ventricle enlarges. This, in itself, is sometimes mistaken for an abnormal hypertrophy, and the patient is needlessly alarmed, both on her own account and because afraid that she may transmit it to her offspring. This compensating increase of heart-power is often the salvation of the woman. It is, in my opinion, the reason why so many women thrive during pregnancy who have been thin, anemic, and feeble ever before. But most of them promptly surrender this gain in a short time because of the added strain of caring for the child day and night, in addition to the former cares of the household, to which must also be added the drain of nursing.

Pre-existing heart disease is aggravated by pregnancy. Increased incompetence is manifested from the middle of the term, and increases to its conclusion. Some forms of heart-trouble are usually worse than others, during pregnancy, but it also happens that, in some women, the least serious affection of this kind will cause the most marked disturbance, while, in others, the worst forms will give rise to very little inconvenience. The important point to be remembered is that it is not so much the particular form of heart-trouble that we must be

on the lookout for as the discomfort, measured in dyspnea, pain, edema, etc., that ensues. If the heart becomes incompetent, it must be helped; and a heart that was normal before, but weak, may need this help during gestation even more than another that is diseased. When there is edema of the lungs associated with dilatation of the right side of the heart, it is a question whether the uterus had better not be made to yield up its contents at once, and this is almost imperative if ascites and albuminuria coexist.

All cases having diseased or weak hearts should be seen often, and must be continued on a good diet, be kept in the open air a fair portion of the time, be made to rest abundantly, be assured refreshing sleep, and be given strychnine with arsenic and iron if they are needed. I prefer the arsenite of iron in doses ranging from 1-16 to $\frac{1}{4}$ grain four times daily. I give the strychnine in 1-20 grain doses as often, or $\frac{1}{4}$ or $\frac{1}{2}$ -grain doses of the extract of *nux vomica*. Dyspnea and edema are best remedied with digitalis or strophanthin in suitable doses, preferably combined with glonoin so that the arterial tension may be kept low, while the heart is strengthened.

Many of these cases of acute dyspnea are quickly relieved by small doses of glonoin at ten-minute intervals. For this purpose I carry 1-250 grain granules of glonoin, and they have never failed me.* I was called in to a case which was pulseless at the wrist, cyanotic, and breathing more than 60 times a minute, though the action of the heart was vigorous—in fact, tumultuous. Three of these granules, at ten-minute intervals each, gave decided relief, beginning less than two minutes after the first one was chewed, and then gradually improving until within twenty-five minutes the pulse was full and steady, the heart's action quiet, the cyanosis gone, and the respiration easy and only 18 per minute.

AUTO-INTOXICATION IN OBSTETRIC PRACTICE.

So much is said and written about septic infection, or intoxication due to external causes, that the error is commonly made of supposing there is no danger from within the patient's own body. This danger is the more to be feared because it is so generally overlooked. In fact, its effects are usually attributed to extraneous influences, and thus it receives improper treatment, with the ensuing consequences so detrimental to the sufferer.

It is a well-established, though largely-overlooked, fact, that abnormal poisons are often formed within the body as the result of changed metabolism. Pregnancy has a profound

effect upon the prospective mother, altering her nutrition, modifying her disposition, reversing her predilections, and inducing innumerable special disturbances.

Auto-infection may arise from sluggish elimination. Retained fecal matter is a nidus for the formation of animal poisons, which are readily absorbed, and who does not know the many general symptoms traceable solely to constipation? A torpid skin, with deficient perspiration, means the retention of poisonous excrement that circulates in the blood to injure susceptible parts of the body.

Women are naturally poor breathers, and this means defective pulmonary elimination, and insufficient oxygenation of the blood. Renal action must be maintained, because enough toxic matter is generated in three days to kill the individual, as was proven by Bouchard.

Disturbances of digestion favor the formation of toxic matter. A prolific cause of digestive derangement is over-feeding, particularly with rich nitrogenous foods, as meat. If to this are added indolent habits or sedentary customs, matters are made worse, especially when it is considered that breathing is then shallower than during physical activity, particularly in the lower part of the chest, where rhythmic expansion and contraction is so beneficial to digestion.

Another characteristic of many women is their small ingestion of water, thus hindering free cutaneous elimination, irritating the kidneys, which have to eliminate concentrated urine, and inviting constipation through deficient secretion from the walls of the colon.

Another source of intoxication probably exists in the excretions of the fetus. We know that there is elimination into the fetal bowel, forming meconium, and into the liquor amnii, as well as an exchange of carbonic-acid gas and oxygen through the placenta. And if the interchange of these two gases between the maternal and fetal blood, separated as they are by four epithelial layers, is constant, there is no reason why some toxic poisons formed under certain conditions of the child may not enter the circulation of the mother.

With the growth of the fetus and of the uterus, there is a coincident increase in intra-abdominal pressure, which leads to increased blood-pressure, thus accounting, at least in part, for the larger and stronger heart and pulse in pregnancy. Increased blood-pressure is favorable to albuminuria, sanguinous extravasation, congestion, and inflammation. Hence some of the liability of pregnant women to renal disease and its resulting toxic effects.

Pregnant women are usually more emotional than at other times. Many disturbances that generally have no effect then yield profound results, such as the arrest of elimination or secretion, and other perversion of function, any of which may conduce to toxic formation and self-poisoning.

The treatment of these conditions is largely preventive, and they generally respond to the removal of their causes. As to diet, experience has quite abundantly shown that this should be what is called light, *i. e.*, the avoidance of rich nitrogenous foods, especially in large quantities. Fresh succulent fruit should form a large part of the prospective mother's dietary. So should milk. Buttermilk is almost (if not entirely) a specific against the occurrence of albuminuria, and should be taken very liberally. The bowels should be kept freely open, medicines being avoided as much as possible, dependence being placed more upon abdominal massage, suitable exercise, diet, and full draughts of water several times daily. If medicine is indispensable, it should be given according to indications, and always with a view to avoiding a drug habit.

The frequent recommendation of alcoholic and malt drinks is an erroneous practice, and should be discouraged. These substances retard elimination, and are, that much, an aid to auto-intoxication.

It seems hardly necessary to add that the corset should be discarded by the mother at the earliest possible moment, both on her and her child's account. It hampers breathing and digestion, and prevents abdominal expansion above the umbilicus, thus favoring forward bulging of the lower anterior belly-wall.

I call attention to this subject because it is almost a virgin field for study, and is promising of rich harvests to pioneer investigators. The subject is so generally overlooked that any carefully observing practitioner may meet with some revelations within a short time if he studies his obstetric cases with an eye to the possibility of auto-infection.

PRURITUS (ITCHING).

This intolerable itching quite often increases the hardships of an already overburdened sufferer. It may be confined to the vulva, or it may extend over other parts, or all of the body. When limited to the vulva, it may be caused by a vaginal discharge; but when affecting other parts, it is usually a neurosis, though the possibility of its being due to saccharine diabetes must not be forgotten, on which account the urine should be examined for sugar in all cases of persistent pruritus. Of course,

the vulvar variety may also be due to the same causes as the general itching. If due to a vaginal discharge, suitable douching with a good antiseptic, as creolin or lysol, together with a local antipruritic wash, will give relief. For the latter purpose, I generally use a wash composed of 1 dram of carbolic acid, $\frac{1}{2}$ oz. glycerine, and 1 pint of water. If this smarts too much for a moment or two after being applied, I have it diluted in sufficient quantity to avoid this disagreeable effect. Another very valuable wash to prevent itching is a solution of formalin (1 dram to 1 pint).

When of diabetic origin, the proper treatment is that for diabetes mellitus, a subject too extensive for proper discussion within the scope of this article. When of nervous origin, its exact nature must be inquired into, and the treatment made to fit the requirements. As a rule, asthenic cases should be liberally supplied with *nux vomica* and arsenite of iron—say, $\frac{1}{4}$ grain of the former and 1-16 of the latter four times a day. In sthenic cases, nerve sedatives like valerian may be used—say, the zinc salt in $\frac{1}{2}$ -grain doses every four hours, or as needed.

But pregnancy, as is well known, is replete with incidents of a reflex nature. Of these, nausea and emesis are the most common. But one of the most distressing, though fortunately not so common, is the severe general pruritus that is met with in occasional cases. This becomes so extreme, at times, as to almost drive its victims wild. Its relief by remedial agents is as doubtful in a large proportion of cases as are the other allied conditions of the pregnant state. A certain remedy for the relief of this complication is not known, though it has been claimed from time to time that such has been discovered. The truth of the matter, in this connection, is that the pruritus is not always dependent upon the same cause. It is safe to lay down the rule that an affection due to a single cause is relievably or curable by a single remedy, and that this agent may be depended upon to do the work with certainty. It is thus that syphilis is curable with mercury and the iodides, malaria with quinine and arsenic. The cause being uniform, the same remedy always has the same effect. I know that there is an occasional lapse from this rule, but the cause for the exception is not known, and I venture to say that when the time comes when we will know enough about these things to be absolutely certain in our opinions, it will be found that the exceptions are caused by extrinsic factors not now recognizable. By this I mean that a syphilis not fully curable by either mercury or the iodides, or malaria not cured by quinine or arsenic, are complicated by other pathologic conditions that are not now recognizable, and

the proper treatment of which, in connection with that of the disease that is recognized, would effect a cure.

That the pruritus of pregnancy is due to multiple causes, seems to me to admit of no doubt. It has been repeatedly claimed that this intolerable itching indicated some pathologic condition of the gravid uterus or of its contents. It has been said to presage an abortion or an albuminuria. But these are largely speculations. The only thing we do know is, that it is an intensely disagreeable condition for the patient, and it is often next to impossible to get rid of it.

I have met a number of cases in my time, and, while some responded readily enough to treatment, others stoutly resisted all attempts to mitigate the sufferings. There are few, if any, of the older remedies in the *materia medica* that have not been tried for this affliction. The subsequent history of pruritus cases has generally consisted in complications during pregnancy or labor, thus partly justifying the belief that the presence of itching indicated some abnormal condition back of it. Some decided claims have been made for calcium chloride in 10-grain doses every 4 hours to control persistent general pruritis. It is very irritating, and must be given in a suitable vehicle. What is best for this purpose, I am unable to say because without experience in its use, though I know of one aggravated case that got well from it after other means had failed. Ten grains may be given every four hours. The entire matter being still in a stage of uncertainty, it is advisable for us all to observe the relation of pruritus during gestation and other abnormal conditions during this period and the puerperium.

URINARY AFFECTIONS.

Incontinence is often caused by pressure of the enlarging uterus upon the bladder, or there may be frequent and tardy micturition instead. Any pessary that will elevate the uterus will relieve the trouble until the uterus mounts into the abdomen. But the same difficulty is apt to return in the later months because of settling down of this enlarged organ and its heavy contents upon the bladder. Position is then the best remedy to guard against aggravating symptoms, and this is determined by the patient herself after a little experimental effort.

Retention is caused early in pregnancy by pressure of the enlarged uterus against the vesical neck, but is of limited duration because the uterus soon becomes too large to remain in the pelvis. Retention is relieved by catheterization or position, and the use of a pessary that will push the uterus up and back.

Albuminuria, said to occur in about 3 to 5 per cent. of pregnancies, and most often in young women, and primiparæ especially, may be insignificant or of the highest import, according to its origin—insignificant if due to the presence of vesical mucus or to some transient cause, significant if caused by renal disease not due to the pregnancy, and implying great danger if accompanied by acute nephritis, and especially if there are also convulsive seizures. If the nephritis is acute, the patient should be placed upon a milk diet, be given a warm bath daily, and be kept warm all the time, though not uncomfortably so. Tonics and iron, and *nux vomica* especially, should be given if the patient is weak, and the bowels must be kept moving by suitable means. In the chronic cases of nephritis, the dieting need not be rigorous, but pregnancy must be ended as soon as danger-signs appear and persist.

Glycosuria is very dangerous, and may end fatally within a few hours of the appearance of sugar in the urine. It is very dangerous and often leads to abortion, after which, as experience shows, the mother's chances of ultimate recovery are better than when she is permitted to complete her gestation. It would, therefore, appear as though prompt delivery were one of the best measures to save the life of the mother, though a fatal termination at times sets in before this can be accomplished.

REFLEX OR NERVOUS SYMPTOMS.

By reflex, or nervous, symptoms I mean the nausea and vomiting of pregnancy, dry coughs due to the gestation, headaches, twitchings, neuralgias, and the host of other aches and discomforts too manifold even to enumerate. From the purely scientific standpoint, these symptoms are "simply reflex," and all amount, therefore, to about the same thing; but these are some of those many instances in medicine that are of vastly greater importance to the practitioner than they are to the scientist. It is easy to dismiss, as of minor consequence, what one does not suffer one's self, but the victim of reflexes imperatively demands relief. It is our business to see that she gets it. But this is, by no means, an easy thing to do.

It has always seemed to me that the treatment of these conditions is too varied. A reflex pain in the knee is treated like one of the shoulder or buttock or elbow, if due to the same cause. Why, then, not treat alike all reflexes emanating from the one cause? This has been my rule, as far as practicable. I attempt two things, and they usually are satisfactory. One is to give what may conveniently be called a uterine specific (say *cimicifuga* or *viburnum*), and the other

an obtunder of reflex sensibility (say potassium bromide). My first refuge is the fluid extract of *cimicifuga*, of which I give 5 drops every four or five hours. If this is inefficient, I give the bromide of potassium in suitable doses, if it is not contraindicated. If the patient is weak or neurasthenic, I give full doses of strychnine or *nux vomica*, as already outlined; and if anemic, I use the arsenite of iron. Usually, it is only after this treatment fails that I have recourse to other medication. For instance, for a reflex cough I would use some cough remedy or an obtunder of sensibility like codeine only after having found the preceding treatment inefficient. Nausea, I have often relieved with 10 or 15 grain doses of potassium bromide, and I have had similar effects from this remedy in the nausea caused by opium and its alkaloids. I also find *ippecac* in doses of 1-500 to 1-50 grain, every ten minutes, promptly efficient for the relief of nausea, at times even phenomenally prompt, a single dose occasionally sufficing.

Persistent emesis sufficient to cause gradual and dangerous inanition is best remedied by rest in bed conjoined with rectal feeding, and large draughts of clear water, together with the medication already outlined, or such other as the exigencies of the case may demand. All else failing, the uterus must be made to expel its contents. Emesis during the latter half of pregnancy is indicative of renal disease rather than of uterine reflex, and requires a careful examination of the urine. If it is accompanied by headache, it is all the more significant. The possibility of real stomach trouble must never be overlooked at any time, for all alimentary disturbances during gestation, it seems needless to say, are not reflex.

Constipation due to intrapelvic pressure in the early period, and of intra-abdominal compression of the gut later on, is best met with *nux vomica* or strychnine associated with *cascara sagrada*. If there is any hepatic disturbance, sluggishness with mental hebetude, effervescing sodium phosphate may be used in two-teaspoonful doses in lieu of the *cascara*, if this proves inefficient. The patient must also be induced to be moderately active every day in the open air. Besides this, the valuable morning regimen of a glass of water on rising, and the beginning of breakfast with some seasonable fruit, followed by a visit to the closet immediately after this meal, whether there be any desire for that or not, should be enjoined.

PERSISTENT LOCALIZED PAIN DURING PREGNANCY.

Probably every physician, with several years' experience in active practice, has observed instances of persistent localized

pain during pregnancy. Its cause and significance, as a rule, is a sore puzzle. The pathology of the trouble is not understood, and hence its treatment still hovers in the wide realm of medical uncertainties. A question of such moment to the patient is worthy of very serious attention. To discover its cause and find a remedy are objects deserving our best efforts until rewarded with success. To these ends, a collective investigation by the profession of such cases would be both instructive and profitable.

I recall a notable instance that occurred about fifteen years ago. A young lady engaged to be married, of excellent reputation, and well known to her family physician for many years, developed symptoms of gastric ulcer. Her stomach soon rejected every kind of food, even in the smallest quantity. She had a pain so localized that she invariably indicated its site by placing the tip of her index finger upon a spot in her epigastrium. She repeatedly, day after day and week after week, touched the identic spot in the same way. Ultimately, she vomited blood, and had to take to her bed out of sheer exhaustion. It was then that her attendant had her removed to the hospital at which he was a member of the visiting staff, so that she still continued under his care. Within two or three weeks of the onset of her stomach trouble, she failed to menstruate, but this fact was expected because of her weakened and anemic condition. Despite all efforts, she died of slow starvation.

The autopsy, held by me within a few hours of her demise, showed her nearly three months pregnant. Her stomach presented no other anomaly than some marked varicose veins about the cardiac orifice, a condition due to persistent emesis, and evidently the source of the hematemesis. There was no vestige of an ulcer, old or new, and no cicatrix.

Another case that came within my notice four years ago is similar. She was 23 years of age, and five months pregnant. She was seized with a sharp sudden pain in her epigastrium, and sent for aid. I found her leaning over the bed in agony, and with the sweat rolling off her face. She could not get into bed. She was at once given an opiate, which she promptly vomited, resulting somewhat in relief from severe pain. The os remained soft, open, and patulous during the paroxysm of pain, and there was no contraction of the uterus. On the following day, the attack occurred with the epigastric pain extending through to the back, and unaccompanied by any uterine manifestations whatever. Morphine and atropin hypodermically quieted her. During the next nine days these

attacks recurred with more or less severity, several times requiring the hypodermic syringe to give relief. At all these times, whenever examined, the uterus was quiescent and the fetal movements were as usual, except during the last few days. On the tenth day, however, the uterus emptied itself spontaneously as recorded below from my history-book:

"About 7 P. M. was taken with a uterine pain, and another a little later, followed by the expulsion of the fetus and placenta. Fetus dead probably for a couple of days, and most of placenta atrophied, only a small section, somewhat larger than a silver half dollar, being of normal thickness, but nearly all of it in a state of either fibrous or fatty degeneration. The uterus was well contracted."

This patient had a similar history in her preceding pregnancy, and with almost identic results. She had one healthy boy about six years of age. She never had the slightest epigastric pain or uneasiness after the expulsion of the uterine contents, and she required no after-treatment except that she was given 20-drop doses of ergot thrice daily to insure involution, for she was in a flabby condition.

Now, here are two well-marked cases of persistent sharp epigastric pain, one accompanied by placental degeneration, the placental condition of the other not being recalled, though most probably normal, or it would, very likely, have been noted.

In another peculiar case with which I am acquainted, the patient complained, throughout her two pregnancies, of persistent pain in the hepatic region, which disappeared after delivery. To allude to these conditions as vagaries of nature, as though the ancient dame was a practical joker, is to admit our utter ignorance of their significance. Far better is it to carefully study these phenomena so that practical results may follow.

BLEEDING DURING PREGNANCY.

Blood may issue from the uterus of the pregnant woman in health or disease. The diseased conditions, such as carcinoma, polypi, fibroids, inflammations, and from direct injury I will not speak of at present, but shall confine myself to bleedings not due to disease, and these are menstruation, placenta previa, and accidental hemorrhage. There is a fatuitous confidence among women, generally of all classes and every degree of intelligence, in the absence of pregnancy if there is a moderate flow of blood. Those who fear pregnancy, justly or unjustly, often make the fatal error of

supposing themselves safe from the effects of their weakness because they happen to have a slight flow at the succeeding menstrual period. It is a fact, however, that menstruation often occurs to a perfectly normal extent once or twice, and occasionally three times, after impregnation. The reason for this is that the fetal sac and the uterine wall (*decidua reflexa* and *decidua vera*) do not unite throughout their entire extent until the third month or later. Menstruation may, therefore, readily enough occur twice after impregnation, and three times if conception occurs just before the menstrual period. But there have been exceptional cases that menstruated for a longer period, some even throughout the entire pregnant state. The continuance of the menses is, therefore, not a guarantee that impregnation has not taken place any more than the cessation of the menses insures the existence of pregnancy.

Should, however, the flow be continuous or irregular, it will be due to accidental hemorrhage or placenta previa, if injury, inflammation, or the other diseased conditions already enumerated are eliminated. The distinction between the two is so difficult as to be practically impossible in most instances, though if the bleeding is frequent and profuse, and especially upon slight exertion or without assignable cause, it is more apt to be due to the location of the placenta in the vicinity of, or over, the *os uteri*. The only positive sign, however, is the identification of the placenta at the uterine os, or the positive determination of its absence from this region.

The best treatment consists in absolute rest, easement of the heart's action, and lowering of the arterial tension. If, in spite of these efforts, the bleeding continues to an alarming state, the uterine contents had better be sacrificed without delay in the best interests of the patient. Except in extreme emergency, or in districts where other medical men are not soon enough available, this should never be attempted without the coöperation of another physician, and this not so much because of the necessity for his assistance in the treatment of the patient, as it is for the future protection of the operator against treachery and blackmail.

MILDER PUERPERAL CONVULSIONS.

This nerve-trying condition had formerly to be viewed with well-deserved dread, for the reason that it was largely incurable; in fact, it is within the limitations of exact truth to say that there was a time, by no means very remote, when what few cures did occur should properly be credited to Dame Nature herself rather than to the attending physician. Though

still at sea concerning the real cause of these convulsive seizures, experience has taught us a reliable treatment in most cases. Our knowledge of the supposed cause has also improved enough to make it seem that the condition is one of auto-infection, involving either the liver or the kidneys, or both, for both have been found diseased post-mortem in these cases, sometimes the one, sometimes the other, and often both together. To pronounce the spasms, therefore, as invariably of renal origin would seem to be an error. Some of these cases are even without a trace of albumin. It is, therefore, manifestly improper to attribute these convulsions to albuminuria invariably and alone. The one fact stands to reason, that the auto-intoxication is due to either defective tissue metabolism or elimination, or both. This, then, suggests the possibility, and in a general way the mode, of prevention.

The general indications for prevention may, therefore, be said to consist in maintaining the activity of the eliminative organs—to wit: the lungs, skin, bowels, and kidneys—calling, respectively, for fresh-air exercise, diaphoretics, aperients, and diuretics. To these might, with possible advantage, be added the cholagogues. Experience has seemed to indicate that the free use of milk is a prophylactic, and some claim this quality for buttermilk in a very high degree. None of these measures are open to the slightest objection, for they all aid processes that are at once normal, natural, and desirable.

With a case of actual convulsions to treat, either before, during, or after labor, there exists the double indication calling for the rapid elimination of the toxicant, and the control of the spasms, the latter more especially to conserve the strength of the patient.

The most efficient, as well as the promptest, remedy for the immediate control of the spasms is chloroform by inhalation. When its use is precluded because of the existence of heart disease, morphine may be given hypodermically. But the best single remedy is, by all means, the hypodermic injection of the fluid extract of *veratrum viride* in ten (10) minim doses. This drug is a powerful depressant, but therein lies its prompt efficiency. Though the patient may soon be in a seeming condition of collapse, there is no danger. After the administration of the initial dose, the drug may be given *per os* in liquid or tablet form as often and as long as necessary to control the convulsions. There should be no fear or hesitancy in its use. Chloral hydrate is also much used, and was employed prior to *veratrum viride*. Many use it now in lieu of the prompter and more efficient drug, presumably either

because, having begun with chloral and finding it reasonably reliable, they prefer to continue with it, or, having tried both, use chloral because of the sometimes alarming appearance of the patient treated with the veratrum. But the alarming symptoms of the veratrum treatment need cause no fear, there is no danger.

The spasms may also be controlled with the bromides, though they are now rather antiquated. Other depressants have been employed, but none equal those already enumerated. Tobacco in any convenient form may be used in lieu of veratrum viride, especially in country practice, when the other is not readily obtained.

Elimination is effected by many in the form of venesection. This is a specially desirable method in the full-blooded, though also applicable in others. The object is to abstract a certain amount of the toxicant from the blood by the removal of the blood itself. The other method is the more elegant one of bleeding the patient into her own bowels, as it has aptly been termed. One of the best remedies for this purpose is elaterium in $\frac{1}{4}$ -grain doses every hour until there has been enough enteric elimination to cause a cessation of symptoms.

When summoned to a case of puerperal eclampsia, the physician should have with him chloroform, a hypodermic syringe, fluid extract of veratrum viride, morphine, elaterium, and a lance. To these might be added chloral hydrate, bromide of potassium, croton oil, and calomel. The anesthetic or morphine, as the case may require, should be given first, then the veratrum viride, and finally the elaterium. Bleeding may follow the failure of the veratrum. Chloral may be given for its slower and more continued effect after the initial treatment.

Reports have recently been published showing excellent results from the epidermic application of liquid guaiacol, but I have never used it.

THE HIGH TENSION TREATMENT.

Under the caption "Proper Treatment of Puerperal Eclampsia," Dr. Emory Lanphear, of St. Louis, presents an interesting article in the *American Journal of Surgery and Gynecology*. In it, he advises, "in parturial convulsions occurring prior to delivery," to chloroform the patient, and empty the uterus. If convulsions recur after delivery, he recommends opening a vein, and injecting from a pint to a quart of normal salt solution, the effect of this being to so increase the blood

pressure as to cause prompt urinary secretion. This has been his experience. He attributes the renal action to increased blood pressure.

If this is the correct view, it would certainly be better to inject hypodermically some cardiac stimulant and vaso-constrictor, say digitaline or sparteine. When arterial tension is very low because of severe hemorrhage, intra-venous injection of normal salt solution, is by all means, the better remedy, for the total blood volume may be so small that even strong arterial contraction may have nothing to act upon in the smaller vessels. In all probability, therefore, the intra-venous transfusion of normal saline solution is indispensable after severe hemorrhage, though digitaline or sparteine hypodermically is a preferable substitute if the blood volume is not seriously reduced though the blood pressure is low.

There are also instances, it must be remembered, in which a high tension of the smaller vessels is associated with a weak heart. It is then that remedies are indicated that will increase the strength of the heart's action at the same time that the blood pressure is lowered. For this purpose the best remedy is either strophanthine or glonoin, both in combination being better than either alone, for while strophanthine is slow in its action but enduring, often for days, the action of glonoin, though short in duration, is prompt in action, the one therefore producing the desired effect almost immediately, and holding it until the slower-acting remedy becomes effective to act for the longer time.

Chapter VI.

DURING THE FIRST STAGE OF LABOR.

If the uterine contractions are efficient, I never interfere. If, however, in spite of severe pain, there are only slight contractions without effect upon the os, I give an anodyne, say acetanilid (gr. viij) with bicarbonate of sodium (gr. j or ij), repeated within half an hour ; or, I may use 25 drops of tincture of opium, or may prefer 20 grains of chloral, to be repeated within half an hour, if needed, to relieve pain and produce sleep. The chloral is excellent for the relief of useless pain combined with nervous wakefulness. False labor is placed *in statu quo* by it for a time, while expulsive uterine contractions are not lessened by it. I have seen patients sleep naturally between pains, and be only drowsily aroused by a uterine contraction, after taking this remedy, who before had been suffering severely.

Proper uterine contractions are better insured, or are augmented if they already exist, by traction upon the anterior margin of the os uteri, with accompanying friction of the fundus. The fingers should always be cleaned, though I am aware of the fact, from personal observation, that in some labors a woman positively declines to become septicallly infected, despite the amplest opportunity. It is our duty, however, to let her take no chances. Traction upon the oral margin of the uterus has the added advantage of hastening dilatation. As soon as the opening is within easier reach, two or more fingers may be inserted, and active dilatation continued. This may be aided, at times, by downward pressure upon the fundus. But these efforts at rapid enlargement of the uterine orifice are merely meddlesome, and therefore to be deprecated, unless specially called for by unusual conditions.

Inefficient contractions may also be stimulated to effective work by 10 grains of quinine, which I usually give in gelatine-coated pills. Notwithstanding the negative report by Dr. Hare, several years ago, on the oxytocic value of quinine, in which he seems not to have had any personal experience, I must say that I do not recall an instance during the past twenty years of my experience in which it failed to cause strong and efficient rhythmic contractions when labor had actually begun. I can also indorse the more recent enunciation of an authority,

whose identity I have unfortunately forgotten, to the effect that quinine seems to have no oxytocic effect if labor has not begun. Earlier in my professional career, I practiced in a very malarial section, where quinine and arsenic were nearly always given with other remedies to combat the ever-present malarial element. In none of these cases that were pregnant have I known of an instance in which quinine caused an abortion or a premature birth, though the patients were often cinchonized.

Nor am I averse to the judicious use of ergot in the first stage of labor. I use a reliable fluid extract in 30-drop doses, half an hour apart, until the uterus gets down to work. I give it in an ounce of hot water to insure speedy absorption, and find a single dose usually sufficient, though a second is occasionally required, and a third very rarely. If the effect of the first dose is partly satisfactory, the second need not exceed 15 or 20 drops. In more tedious cases, especially in primiparæ with rigid soft parts, the effect of the small dose of ergot soon wears off, when it must be repeated. The effect of this dosage is accentuation of the normal rhythmic contraction; it is not large enough to cause tetanic contraction.

INJECTIONS.

In regard to the propriety of vaginal injections there is a wide difference of opinion, ranging all the way from the one ridiculously meddlesome extreme that washes the patient inside and out with an antiseptic solution, and shaves the hair from the vulva and pubes, to the equally senseless opposite course of never using any antiseptic precautions, and ignoring all efforts at cleanliness. Patients are killed by both methods. The aim should be to treat parturition as a natural process. Usually, there is no more call for an antiseptic injection preceding the birth of the child than there is for one preceding a normal stool. Both are natural processes that should not be unnecessarily interfered with. Injections carry away the natural lubricant, the cervico-vaginal mucus of this period, and leave a roughened surface. Who has not observed the normal smoothness of the vagina give way to an undesirable roughness after the premature rupture of the membranes? It is not always so, but, when it does occur, it illustrates what is often done with the routine injection. Avoidance of injections is my routine practice. I leave everything to Nature so long as she is doing her work satisfactorily. When labor is dry and tedious, and dilatation slow, I find warm injections useful in relieving suffering and hastening dilatation. The question

of injection does not bother me a bit at this stage. After placental expulsion, I use the hot douche, when needed, to check bleeding, whether from the placental site or a cervical or perineal laceration. This I always make antiseptic, preferring the creolin, lysol, or formaline solution (5, 3, or 2 per cent. respectively), in place of carbolic acid, which I formerly used. I use the same injection within the uterus and over all the vagina in septic cases. I have also found the warm douche serviceable in easing after-pains, the effect sometimes lasting as long as four hours.

CHLOROFORM.

Whether or not it is best to give an anesthetic to lessen the suffering of labor, is a question that has been considerably debated. I do not mention ether, because it is too slow, and chloroform seems equally as harmless in labor, besides being made still safer by the addition of two drops of amyl nitrite to the ounce. I have used it to ease the pain of labor, and do so still; but I do not urge its employment, while, in the less severe cases, I counsel against it. I have tried easing labor pains with it in the way usually described, *i. e.*, allowing it to be inhaled at the beginning of each pain, but I have noticed, in a fair proportion of cases, that uterine contractility became diminished, and that there was some consequent free bleeding.

Some women are prejudiced against its use, and do not want it. I never urge them to have it unless the suffering is of more than the average severity. While I have observed that its inhalation does not usually cause any perceptible lessening of the uterine contractions, I have noticed some cases in which it could fairly be credited with having caused a cessation of uterine activity, and had thus been the means of prolonging labor. Against this experience I would cite a case, as follows, of complete chloroform anesthesia, with a shortening of labor.

Mrs. F. G., German, married, and about 30 years of age, had had one child about three years before, the labor lasting fully thirty-six hours. A week before her second labor, I was called in and found that she had had labor pains since 10 o'clock of the night before, but they had let up considerably. She had some nausea and vomiting. The head of the child was engaged in the pelvic inlet, but the os was high up and behind, so that its lower edge only could be reached. I gave her some acetanilid to lull the pain, in the expectation that she would rest and sleep. Three and a half hours later I found my anticipations realized as to rest and sleep. I then gave 10

grains of the bisulphate of quinine. Three hours after taking this, I found hardly any pains, and I concluded to await developments.

Six days later, on August 25, 1895, I saw her in actual labor, second stage, at 3.30 P. M., the membranes having ruptured at noon while she was attending a customer in her bakery. Pains then came on at once. I found the os dilated, the head in the l. o. a. position, and the pains hard, though progress was very slow. All her pain was along the lumbar and lower dorsal spine, and so severe that she screamed with all her might. She had suffered much the same in her former labor, but not quite so severely. I put her under chloroform to the surgical degree, and kept her there until 5 P. M., when the child was born. The uterine contractions were not lessened by the anesthesia, but all the soft parts, including the os, became softened, and the contractions, therefore, noticeably more efficient. There was an unavoidable slight tear of the mucous membrane at the perineal edge. The child weighed nine pounds, which was relatively very large, because the mother had a markedly justo-minor pelvis.

In this case there were after-pains for two days, and I had applied a binder. On October 10th I found her uterus retroverted.

This invaluable agent makes it possible to easily overcome unforeseen difficulties. A transverse presentation is cut short by the use of chloroform, and the performance of version. Hours of suffering may be saved in this way, and the patient's strength be correspondingly preserved. The child is, also, proportionately less apt to meet with injury.

Forgetfulness or neglect to carry chloroform, though readily enough rectified in city practice, often cannot be remedied for many hours in the country. And when we consider that delays in some such cases for so long a time may result in much injury, or even death to the child or mother, the duty of the country practitioner to attend every confinement fully equipped becomes evident.

Without the use of an anesthetic, the application of the forceps, or the performance of a symphysiotomy, or the stitching of a perineal rent, becomes a brutally painful and harrowing necessity, while with it, the labor ends with the beginning of its administration so far as the patient is concerned, and the physician's work is considerably simplified and shortened. There is, therefore, almost certain use for chloroform in very many, if not most, cases of childbirth, if for no other purpose than the mitigation of suffering. No physician should

be without it, and the best practice will, as it should, inevitably go to those who employ it wisely for this purpose.

METHOD OF GIVING CHLOROFORM.

I do not know who originated the method I use of giving chloroform, but I learned it from Dr. Charles Jewett, of Brooklyn, twenty-one years ago. Two drops of amyl nitrite are added to each ounce of chloroform, thus insuring a free cerebral circulation. An extra cork of the proper size to fit the chloroform bottle is slitted along its whole length on one side in the form of a V-shaped groove. When the anesthetic is to be given, this cork is fitted into the bottle just as firmly as is needed to let the contents out through this groove, drop by drop. The patient's nose, lips, chin, and adjoining parts of the cheeks are greased, and a single layer of toweling spread over the face. The chloroform is then dropped upon this just under the nose. At first 5 or 6 drops may be used, but after this only 1 or 2 at the end of each expiration. The patient becomes unconscious very quickly, and is kept so with minimum trouble and expenditure of chloroform. I have occasionally had an inexperienced woman give it for a short time in this way after having gotten the patient under, and I have never had a mishap.

COCAINE DILATES THE RIGID OS.

Dr. J. Farrar read a paper before the Obstetric Section, British Medical Association, relating his discovery that a 10 per cent. solution, freely painted over the rigid os, will cause it to relax completely in a very few minutes. However, his discovery is rather one of detail than of a general principle. As pain acts in a reflex manner to tightly close the os uteri, anything which will remove the sensibility to pain will aid in its relaxation. Hence an opiate or general anesthesia has long been used for this purpose, although they also partly act by reason of the general muscular relaxation which they cause. Other local anesthetics besides cocaine have also been quite successfully used.

When the os is fully dilated, I rupture the membranes with a hairpin carried along the index-finger. If the pains are growing less and the intervals longer, I also rupture the membranes, though the os is not fully dilated, for it changes the inefficient nagging pains to the more vigorous, less trying, and more bearable expulsive efforts that are marked by progression of the presenting part.

I use the hairpin because it is always available, and, to

me, the most convenient. The finger-nail is often so softened from the vaginal moisture, and washing, that it cannot be used to scratch the membranes. Nor do I always disinfect the hair-pin, for it seldom seems necessary to me to do it, for the reason that the danger from infection at the time and location is practically *nil*. Besides this, genuine consistent antisepsis at this stage requires an attention to detail and surroundings that are impossible in most cases. This, I am confident, will be generally conceded in the near future, if it is not already the conviction of most practitioners of experience.

How long one should wait before bringing on the second stage of labor depends upon circumstances. If delay is due to tough unruptured membranes, despite a fully-dilated os and normal soft parts, these should be ruptured. The same procedure is indicated if there is uterine inertia due to overdistention. The rule may safely be laid down that, whenever the normal progress of labor is arrested, interference is indicated, the mode of the interference being determined by the nature of the delaying cause. This rule covers the time for active interference, which is variable. Thus a primipara with small pelvis, moderate uterine contraction, and rigid soft parts, may still be left to her own resources at the end of twelve hours if progress has been steady, though gradual, because Nature is acting conservatively and without injury. To hasten such a labor is to hazard injuring the child's head and the soft parts of the mother, with no compensating benefit, and with the certainty of more or less complicating the childbed state. On the other hand, in the case of a multipara with large pelvis and elastic soft parts, but with a lazy uterus, it is best to bring on contraction at once. It is never a question of hours and minutes, but always one of local relative conditions between the child and the maternal passages, and the general condition of the mother.

Chapter VII.

DURING THE SECOND STAGE OF LABOR.

After the rupture of the membranes, the problem is to bring down and deliver the head. Nature may usually be depended upon to do this, but she can be profitably assisted. I see no objection to bringing the head down rapidly upon the perineum, though it should not be allowed to pass over this body quick enough to do it damage. Thus I always strive to bring the head to the perineum as speedily as possible, and then retard it until it may safely pass. Of course, there are circumstances when severe contractions will not permit holding back, when one is compelled to yield to the inevitable and make necessary repairs at leisure. I do not favor the use of the forceps, especially in the upper strait, unless they are very necessary. But I have used, within the last few years, with excellent success, a new device that has been quite uniformly efficient whenever it has been employed. This consists in making very firm pressure against the lower end of the sacrum, or the sacro-coccygeal junction. And I mean pressure seemingly almost sufficient to bend back the coccyx. The joint must be strained. Less pressure than this generally proves negative, while the violent disturbance of the local nerve-supply, due to very firm pressure, causes the same reflex uterine expulsive effort that follows the pressure of the descending head upon the same part. The pressure is maintained until the descending head impinges upon the back of the pressing finger, when this digit is slowly passed down the coccyx to its tip, and thence, with almost equal firmness, along the posterior vaginal wall to the perineal body. Here the pressure and descent of the finger are continued, the anus becoming thereby elongated antero-posteriorly as in the passage of the head, and the perineal body is made to bulge downward—and all this without tension upon the anterior perineal margin, thus closely following Nature, and deceiving her, as one might say, into the belief that the head was actually approaching the outlet. Pains are much increased in duration and efficiency by this procedure, and may be thus excited if the intervals are longer than is required to rest the patient. But the finger must not descend too quickly, nor should it traverse

the entire distance from sacrum to perineum at the very first attempt. Care should be exercised to imitate Nature's usual gradual processes rather than precipitate action.

ON ROUTINE SPINAL ANESTHESIA IN OBSTETRICS.

Much has appeared in the medical journals upon the subject of causing painless parturition by anesthetizing the spinal cord by means of cocaine injections within the past couple of years. My conviction upon this subject is satisfactorily expressed by the monosyllable "Don't."

Dr. J. Leonard Corning, of New York City, is the originator of cocaine anesthesia of the cord. I recollect distinctly reading his original paper in 1885, and was prompt to call attention to his earlier work upon this subject as soon as the transatlantic claims of priority reached us. I believe that cocaine anesthesia of the cord has its abiding-place as a therapeutic measure of great value, even in obstetric practice, but unhesitatingly and unqualifiedly denounce its routine use to lessen the pain of labor.

It is objectionable because of its danger. Sepsis, though under control, will occur in many cases. There is danger of meningitis—it has occurred. There is danger of death—it has already found its victims. *Obstetrics* (October, 1900) is authority for the following:

"Gumprecht, in the *Deutsche Medicinische Wochenschrift*, 1899, No. 24, and the *Centralblatt für Chirurgie*, August 19, 1900, reports two cases of sudden death in his own practice, following the production of spinal anesthesia. He likewise refers to fifteen other cases of death from the same cause."

Dr. Marx, in a series of experiments in the routine use of cocaine anesthesia of the cord in twenty-three cases (*Med. Rec.*, October 6, 1900), found the procedure often followed by more disagreeable after-effects, and for a longer time than usually succeeds ether anesthesia, and especially that by chloroform. Vomiting was a specially-marked symptom. Also headache, profuse perspiration, chilliness, and a temperature as high as 103°.

Others have had more or less similar results. In some, spinal anesthesia is not produced after repeated trials by experts. Thus Dr. S. Osmond Goldan failed in three cases out of twenty, while he had toxic symptoms in an obstetric case. In others, anesthesia continues for only twenty or thirty minutes.

There is no sense in thus needlessly courting grave dangers for the avoidance of the pain of labor. Barring special contra-

indications, chloroform inhalation is the safer pain-easer. This anesthetic may be dropped upon a handkerchief placed in the bottom of an ordinary goblet, which the patient may use herself at will, the anesthetic always coming away with the hand and glass as soon as it becomes sufficiently effective to abolish the voluntary muscle-sense.

Finally, it is safer to come back to Dr. Corning's original plan of injecting the cocaine into the intervertebral tissue, whence it soaks into the cord. That obviates the danger of medullary sepsis and meningitis. It only requires a longer time to be effective.

Spinal anesthesia, or medullary narcosis, by means of injections of cocaine, eucaïne, or any other local anesthetic, is theoretically justifiable only when positive danger menaces the patient from the use of ether or chloroform, and even then I should recommend, and preferably practice, the old method of injecting into the adjacent muscle-tissue rather than entering the far more dangerous precinct of the medullary sheath.

A point that seems thus far to have been overlooked, is the danger of anesthetizing the respiratory centre in the medulla, not a fanciful one by any means, when Tuffier removed mammary tumors by this method. It is by no means improbable that some of those who never hesitate to do to others what they would not have done to themselves will be tempted to use these injections higher and higher until a few lives are snuffed out. Even then such unfortunate death may be without effect because explained away upon other grounds.

Dr. Grandin, at a meeting of the section on obstetrics and gynecology of the New York Academy of Medicine, in 1900, relates his failure with spinal anesthesia, expresses his utter lack of confidence in the general utility of the procedure, and states that he finished his operations, begun after spinal injection, by general anesthesia.

The one certain thing about the new method is the danger and unpleasant features; its uncertain feature is whether anesthesia will be produced or not, and its duration if effective. To me the method seems justifiable only when anesthesia is necessary, but when the danger from ether and chloroform is too great to admit their use, though an operation is imperative.

PULLING.

Many nurses (?) and want-to-be-helpful neighbors offer their hands to the patient to pull upon, or fasten a cord or sheet to the bed, and give her the other end of it. If this is a relief to the patient, and I rarely find that it is, I never object.

It is usually an utterly senseless procedure, respected, seemingly, because of its age. I make it a practice to object to nothing the patient wishes to do so long as it will not injure her. In regard to the pulling custom, I simply tell her that it is useless except in so far as it eases her mind, occupies her; but I also caution her that her strength is limited, and that the more she wastes in that way the less she will have to spare when it is needed. That is usually enough to decide her against the procedure.

ATTITUDE OF THE PATIENT DURING LABOR.

If labor is progressing reasonably well, the patient should be permitted to get into the most comfortable position she can, just as we would prefer to do if in her place. If the physician, unfortunately, requires her to lie in a certain place and position for examination, she must be made to do so, but it is best to begin early to make intelligent and satisfactory examinations of these patients in all positions. It is easy enough if one tries, provided the knowledge of anatomy is not deficient. I let them lie, sit, or stand in any and every way they please, and examine them when I desire, just as they happen to be at the time. But there are times when it is necessary for the patient to assume certain postures. Thus the knee-chest position is desirable in prolapse of the cord, or the Walscher position to enlarge the conjugate diameter of the inlet, or the lithotomy position that of the outlet. This position consists in laying the patient across a firm edge, as that of a table, so that the legs and thighs hang over unsupported. The sacrum rests upon the edge, thus acting as a fulcrum with the extremities as long heavy levers twisting the sacro-iliac joints by carrying both ilia forward and in advance of the sacrum at the sacro-iliac joints, in this way advancing the pubes while the sacral promontory remains relatively stationary. This serves to aid the engagement of the head in the upper pelvic strait, but it narrows the antero-posterior (conjugate) diameter of the outlet. This, in turn, is, however, elongated by the opposite posture, that of the extreme lithotomy position. Here the thighs are drawn well upon the belly, and abducted, rotating the ilia upon the sacrum so as to cause a divergence between the coccyx and pubes, just the reverse effect of the Walscher position. It is not often that women object to this position once they have tried it after the head is well within the pelvis. Probably neither position appreciably affects the conjugate diameter of the middle plane of the pelvis.

DANGER OF TRACTION IN BREECH CASES.

A point not to be overlooked in breech cases is the liability of causing luxation or subluxation of the femur at the hip joint from traction. The subluxation may escape notice for a long time, only to be noticed by its after-effects—hip-joint disease. It is very rarely necessary to hasten the passage of the breech; in fact, it is usually better to retard it in order to cause the wider dilation of the outlet of the parturient canal, so as to afford that much better chance for the quick delivery of the after-coming head, when traction really may, and usually is, needed.

WHEN AND HOW TO USE THE FORCEPS.

The forceps should be of the pattern preferred by the operator. Due allowance must ever be made for personal idiosyncrasies or equations that cannot be estimated. A poor instrument may be well handled, and to good purpose, by one who would not do as well with another that most men agree upon calling the best. But all forceps would better be entirely of metal, for evident reasons. My own preference is for the old Hodge forceps, with an increased lateral curve for the blades. They are all-metal, and have hooked handles. I do not say that this is the best pattern to use, but it has done my work satisfactorily for years, and I have no desire, therefore, to change it. Others, no doubt, have a similar preference, and for like reasons, for other patterns.

The forceps are required in high cases, where there is uterine inertia, or where this threatens because of a difficult passage for the child, thus necessitating a long labor if Nature is left unassisted. It is folly to await the exhaustion of the patient. If the fetal head is unduly large, or the maternal passages too small, it is better to supplement Nature's effort at squeezing the child's head into proper proportions and soon be done with it, alike for the benefit of the mother, child, physician, and anxious friends, than to invite a tedious convalescence from exhaustion. Thus the forceps serve to mold the head of the child and aid the expulsive efforts of the uterus. In low cases, it often happens that the uterus has become inert, that expulsive efforts cease, and when the head is still beyond the reach of the fingers. Here is one of the easiest opportunities for speeding a delivery when there is not the slightest grounds for objection. Nothing is lacking but the *vis-a-tergo* of uterine contraction, a force most readily supplanted by the *vis-a-fronte* of the forceps and the operator's muscle.

In all forceps deliveries in which the perineum is in the slightest danger, both blades should be removed before the passage of the head, and the head itself shelled out between pains in the manner already described. With proper skill, they may be applied, in many cases, without an anesthetic, though the use of them often causes more pain than the natural labor. I have applied them at the inlet without an anesthetic and without complaint from the patient, though I have also had the opposite experience. In the higher operations, where the sense of touch and a knowledge of the anatomy of the parts are the only guide, much care must be used, especially by the novice, not to include the uterine wall within the grasp of the blade. Nor is it excusable to be so careless as to half tear off an ear.

Nothing could be easier than an ordinary forceps delivery if one knows how, though nothing could be more difficult if one does not. I have seen one man make such traction on the forceps that it tired him. Then he took off one shoe, and, placing his stockinged foot against the poor woman's buttocks, began to tug at the handles with a great deal of his strength, and he was a very strong man. I tapped him upon the shoulder and suggested that he pull a little downward as well as forward, which he at once did, with the prompt descent of the head, though only part of the previous force was employed. Now, this man was a good physicist—in fact, had taught it but a few years before—but he was a wretched anatomist. So it is more a matter of pulling right than it is of pulling hard. It should not be forgotten that the axis of the pelvic canal is curved, with the concavity forward. The anterior pelvic wall is formed by the relatively shallow pubes, while the posterior wall is formed by the much longer sacrum and the coccyx. If traction is made in this curve, not much force need ever be used in forceps deliveries. My practice is to grasp the locked part of the forceps with my left hand from above, while I use my right hand at the end of the handles, grasping them, also, from above if the head is high up in the pelvis, and the forceps handles, therefore, much depressed; but I change this to a grasp from underneath as soon as the handles are more elevated because of the descent of the fetal head. With the hand over the lock, I can press downward, thus doing away with the cumbersome, and wholly needless, axis-traction attachment, while, with the other hand, I can pull forward and upward, thus enabling me, with the nicest precision, to employ force to any degree and combined in any of these directions. I know and feel then exactly what I am doing. It is thus easy to fol-

low the pelvic curve, and coax the head along the lines of minimum resistance. The way may be felt by combined traction, rotation and oscillation. Damage can never result to the mother or child by this method, except by some unavoidable accident, or in extreme cases of obstruction due to disproportion between the fetal and maternal parts.

In a paper several years ago, by a gentleman whose identity has now slipped my mind, I noticed some very sensible remarks on the obstetric forceps. Those writers and talkers who declaim against the use of this instrument by that very act avow their unconscious recognition of their own inability to properly employ it. A case attended by them is necessarily better off by having the use of the forceps deferred as long as it is possible to dispense with them, for the mother may suffer for hours, or she might suffer for many days or weeks, perhaps become a chronic invalid, if she were not actually killed, if the instruments were applied by such an incompetent. Many physicians imagine that forceps deliveries consist merely in clamping the blades about the child's head, and then pulling, without regard to how much force is used, until something yields. This was my experience with the doctor who pulled with his feet braced against the woman's buttocks, the experience teaching him, however, that it was not so much a case of strength of pull as it was direction of pull.

This important point, of traction in the proper axis or direction, is so often overlooked, so little understood by many, and yet so easily comprehended. The first rule in all forceps deliveries should be, the use of only so much force as can do no damage. The second rule is, to apply traction in the direction of least resistance. The third rule should aim to secure adherence to the other two, and this is well done by grasping the instrument at the lock, while the other seizes it by the handles. Both hands should control the instrument perfectly, the hand at the lock making traction in the higher axis of the pelvic canal, while the other pulls in the axis of its outlet. Any combination may thus be employed to compel the head to traverse any desired curve. A fourth rule involves the careful avoidance of more compression of the handles, and hence squeezing of the fetal head, than is just necessary to prevent the blades from slipping. A fifth rule would require tentative alternating lateral, fore and back, and rotary movements to find and keep the true axis of exit, *i. e.*, along lines of minimum resistance. I may also add a sixth rule necessitating the removal of the forceps when the head is well down upon the perineum, and prohibiting its delivery encompassed by the blades.

With these few safe admonitions well in mind, and conscientiously adhered to, many a practitioner, otherwise dangerously unsafe, may safely and advantageously make use of the forceps whenever the head fails to progress for an hour despite efficient contractions, provided, of course, that the os is fully dilated.

A very fair proportion of deliveries can be shortened by several hours, much to the advantage of all concerned, and with absolutely no risk to any one, by the judicious use of the obstetric forceps.

WHEN AND HOW TO USE THE FORCEPS.

One does not have to go far to discover some ancient practitioner "who has never used the forceps." It requires much less travel to unearth the enterprising individual who is all haste, bustle, and enterprise, and uses the forceps in almost every case of labor unless he happens to get there after delivery, and even then he is loath to leave the expulsion of the placenta to nature or to manual extracting, but would fain assist even it with this abused implement of relief. Both these are extremists, and the cause of their weakness is ignorance. Upon the one it produces timidity, upon the other foolhardiness, an instance of the fool rushing in where angels fear to tread. The former sins by omission, the latter by commission. Of the two, perhaps, the former does the less damage, for Nature usually attends to this business well enough to answer every purpose, but the wanton meddler often balks her, alas to the injury of his patients.

When to use the forceps, then, becomes an important query. In a general way, this may be stated to be when unassisted Nature is inadequate to do the work, or cannot do it without undue sacrifice of the mother's strength, or danger to the child. Many circumstances contribute to this condition, such as a small or obstructed parturient canal, an unusually large head, inertia of the uterus, waning strength of the mother, or abnormal presentation. These may respectively be exemplified by a justo-minor pelvis, an intra-pelvic growth; hydrocephalus or an unusually large child; the inertia uteri of the frequent child-bearing woman, or that of asthenia, or that of fatigue; dry labor; occipito-posterior cases with delayed spontaneous rotation; or persistent face presentations. Forceps should, in other words, be used whenever necessary to conserve the strength of the mother or to save her or her child's life. They should never be employed to speed delivery to suit the convenience of the attendant.

How to use the forceps is a query admitting of an answer in two words—with skill. This requires manual dexterity, mechanic ingenuity, a *tactus erruditus*, a thorough knowledge of intra-pelvic anatomy, an understanding of physics, discriminating judgment, courage, decision, and a cool head, the latter qualities being most desirable in the young and less experienced practitioner, to whom any case seems of greater moment than it does to the man of riper practical knowledge.

An essential requisite to the good use of the forceps is a thorough appreciation of the size and form of the parturient canal, and the relation borne to it by the presenting part. The blades should be introduced with a view, first of all, to conformity with the curved axis of the canal. They should glide into position gently and without force, except in rare instances. Care must be observed at the vulva and at the cervix that no maternal structures be grasped or pinched, either by the blades or lock. With the assurance that the blades are within the cervix, it is necessary to guard against stripping the child's ears before the advancing edge or against claspings a hand against the head. A hand caught within the grasp of the instrument might end in a permanent deformity. When the blades have sufficiently entered, and are applied to the presenting part without the intervention of additional fetal parts or maternal tissues, they should be patiently adjusted and carefully locked. Be deliberate—eschew haste.

How to draw the head down and out is a simple matter, but it is an art. I have known men to deliver a woman with ease after others had failed despite the ignorant use of an unsafe amount of brute force, even to the extent already mentioned, where the operator's foot was placed against the woman's buttock as a brace. It is not nearly so much a matter of pulling hard as it is of pulling right. Nature eventually opens an abscess by pushing it along lines of least resistance. The application of this same principle is the secret of easy forceps deliveries. With one hand around the lock and the other clasping the handles, traction may be made in any axis, either direct or in a curve. The part between the blades may be moved laterally in any direction or it may be rotated. Thus, with a combination of traction, oscillating lateral motions, and slight rotation, the presenting part is made to traverse the parturient canal along the line of least resistance, and with as much expedition as the rigidity of the soft parts will safely permit. Everything is then under absolute control of the operator, and he falls far short of the requirements of his responsible position if, with this gratifying assurance, he permits himself to be hurried or excited.

As a rule, the forceps should be gently removed as soon as the head is down far enough to be held by the finger in the rectum, for the addition of the thickness of the forceps blades to the head may be the determining factor in a perineal laceration if permitted to come through with the head.

The kind of forceps to use must ever remain the choice of the individual operator, and must suit his impalpable peculiarities, his personal equation as the astronomers put it. They should, however, be sufficiently curved on the edge to correspond with the average pelvic axis, and on the flat so as to prevent slipping during traction without too much compression. Compression of the fetal head in forceps deliveries may occasion meningeal hemorrhage. In fact this accident may even result in labor without instrumental interference. On this account, undue force should always be avoided.

DRY LABOR.

After premature rupture of the membranes, there is often a marked diminution of the lubricating cervico-vaginal mucus so essential to the easy passage of the child. Whether this be due to the washing away of the mucus already exuded, or to other causes, is immaterial at present, for my purpose is to advocate a good old substitute for the absent lubricant. My custom, under these conditions, is to use several ounces of lard. This I introduce in lumps, and spread it about the vagina with two fingers. A good stiff vaseline is even better, if the labor is very tedious, for it remains longer. Either lubricant can readily be combined with an antiseptic, the only implements required being a large shallow plate and a table-knife for a spatula. The very simplicity of the remedy makes it easily forgotten, but its efficiency merits a more permanent abiding-place in the obstetric memory.

SAVING THE PERINEUM.

Various methods have, from time to time, been advocated for the purpose of preventing perineal lacerations, some of them actually aiding in the bringing about of this accident. The reason for so many methods, and particularly bad ones, is a poor knowledge of physics and the mechanism of labor. Besides a thorough knowledge of physics, one must be master of the anatomy of the entire parturient canal and such parts of the fetus as are factors in the process of parturition. I will not go into the mechanism of labor at present, because it is too lengthy a subject for handling at this time, though the importance of its full understanding cannot be overestimated.

Without its mastery, it is impossible to be a master of obstetrics. The entire problem, in the delivery of the child through the vulva, is to have the presenting part pass through in its shortest diameters. This is particularly true of the head, the the largest and most unyielding part of the child. The smallest head diameter is usually on a plane passing through both parietal eminences, and impinging in front somewhere at the upper half of the anterior fontanelle, while behind it is near the occipital protuberance. This part pushed through, the nape of the neck engages under the public arch, and from this suboccipital point the forehead and chin are about equidistant, and very nearly equal to the biparietal diameter of the head. In some heads—in fact, in a goodly proportion—the form is so well rounded that this is not true, and in such there is some delay in the descent and extrusion of the head while it is being molded into a narrowed, elongated, shape by the intermittent pressure of the uterine contractions. Such a labor must not be hastened in the second stage, nor should an oxytocic be given unless there is uterine inertia, but not, as a rule, ergot, for tonic contractions are dangerous under these conditions because of the constant compression of the maternal soft parts between the fetal head and the pelvic walls. Nor is the constant strain upon the child's cerebrum and circulation without its dangers to the babe.

About nineteen years ago, in making a post-mortem examination of a woman who died immediately after the forceps delivery of her dead child, I found the upper part of the vagina on the left side torn through into the abdominal cavity, and sloughing over a large area. From the family and the two physicians who delivered her, I learned that she had been attended by a midwife who had given her repeated doses of ergot for nonprogression of the fetal head despite severe pains, which were increased by the drug, though the head did not come down. After twenty-four hours' waiting, the husband called in one physician despite the midwife's protest, and he at once summoned the other. They found the head wedged firmly against the left pelvic brim, and the vaginal wall soft and mushy. The woman had a high fever, a fluttering pulse, and the lancinating pain of peritonitis—she was almost moribund.

Now, here was a case in which the tonic contraction of the uterus had held the fetal head so long against the pelvic brim, steadily compressing the vagina, that the softer intervening structures had become gangrenous and ruptured, exuding infectious material and blood into the peritoneal cavity,

with the inevitable result. Such was my report to the coroner's jury, in accordance with which they formed their verdict as to the cause of death. The fluid extract of ergot had been given several times, in this instance in dram doses.

But to return to the way of guarding against perineal rupture; my practice is, first of all, to insure maximum flexion of the head until the occiput or the nape of the neck is well under the pubic arch. Then, as the anus becomes elongated and the perineum bulging, I place the index and middle fingers, or the thumb, according to the position of the patient, upon the anterior rectal wall, and push the head well up against the pubic arch. I do not touch the perineum. When I find its edge about as taut as I deem safe, I urge the patient to cease bearing down—ask her, if possible, to “draw up”—and use the palm of my hand against the advancing head to press it back, in the meantime always maintaining forward pressure from the rectum toward the pubic arch. In this way undue progress of the head may be judiciously retarded in most instances, though I know this is sometimes utterly impossible, for I have experienced it. But the absolute control one has over the advancing head by the method thus stated enables one generally to avoid the too-early birth of the head, while it becomes easy to shell out the head between pains at any time it is believed that the perineum has been sufficiently distended. I have used this method for years, and have had but few lacerations to record, and these were nearly all precipitate labors.

WHEN TO CUT THE UMBILICAL CORD.

The question as to when to cut the cord has repeatedly been debated pro and con, and is no nearer settlement than ever. Wewer¹ advocates cutting at once if the mother is in danger, though he acknowledges that the question is not yet settled in normal births. According to him, Meyering, of Erlangen, favors late cutting, on the ground that the longer one waits the less is the amount of blood in the placenta, and hence the more in the child. He estimates that the difference in time between early and late severance of the cord adds 96 grammes (roughly 3 ounces) of blood to the child. This is far from advantageous, however, from the standpoint of those who think it beneficial to cut the cord before tying, and letting it bleed a little before it is ligatured. And it may be that those who believe thus are in the habit of tying late. Meyering claims that the additional blood-quantity secured to the child by this means stimulates its growth in the first days of life. He, there-

¹ *Der Kinderarzt* for 1897 (viii., 27.)

fore, also advocates Credè's method of placental expression in the belief that this further augments the total quantity of the infant's blood, which seems to me, however, to be an absurd and visionary proposition from a mechanic standpoint alone, for the highest possible degree of compression by this method would be wholly inadequate to accomplish the purpose through the placental network, even if the umbilical vessels could resist the pressure.

Engel, of Klausenburg, favors late tying because all infants thus treated rest better, nurse less, and are redder than those in whom the cord is tied early.

Schucking, of Halle, favors tying the cord a few minutes after birth, because of the blood forced into the child from the placenta during the loosening and compression of this organ during efforts at its expulsion.

Schiff finds that in cases of late ligature the blood is increased, at least its corpuscular element; but that this is excessive, and leads, after a few days, to hyperactivity of the emunctories, and sometimes a severe icterus due to disintegration of the superabundant corpuscles, after all of which unnecessary disturbance there is a return to the same condition and blood-quantity and quality found in infants whose cords are ligated early, and from whom all these objectionable symptoms and processes are absent. He, therefore, ligates the cord early.

At the same time that we pride ourselves upon our common-sense, many among us are prone to set an excessive value upon the theories borne across the water, at the same time that important suggestions emanating from among ourselves are discounted with the utmost abandon. I have always made it a practice to ligate the cord as soon as I was ready, provided the child was healthy; and they usually seem to get along very well, so well, at least, that nothing objectionable is noticed. If there is a valid, discernible reason why tying the cord should be postponed for half an hour, or longer, it is, of course, eminently proper for us to be guided accordingly; but there has, thus far, been no sound reason given for the abandonment of the old, and apparently sensible, custom of severing the child from its mother at the first opportunity so long as there is not present one of the well-recognized contra-indications.

PLACENTA PREVIA.

The term placenta previa designates the attachment of the placenta to the lower portion of the uterus, and may or may not cover or overlap the os. It comes under this heading so long as it rests upon any portion of the lower uterine wall that

must of necessity become stretched during the dilatation of the os. This stretching of the uterine wall without corresponding expansion of the placenta, causes a separation of the two surfaces, with incidental bleeding, and this bleeding is certain to continue until the placenta is expelled, except during firmer uterine contraction. It becomes, therefore, urgently necessary, in the handling of these cases, to terminate labor as speedily as possible. The usual division of these kind of cases into the three groups called complete, or central, in which the placenta covers the os; incomplete, or partial or lateral, in which the placenta either just reaches the os or extends part way across it; and the marginal variety, in which only a part of the placenta extends into that segment of the uterus that becomes stretched during dilatation of the os—these distinctions are ones of degree only, and might be subdivided, but to no advantage. As regards treatment, which is the practical consideration, it is merely a question of persistent placental bleeding, and how to end it before it proves fatal. On this point I shall have something to say presently.

From the nature of the trouble and the cause of the hemorrhage, it is self-evident that there should be little danger until the later months of pregnancy. This increases toward the end of gestation, and culminates when labor begins. Bleeding, as may be expected, may appear at any time, with or without apparent cause, and may vary from a slight show to a profuse flow. It may cease spontaneously, and may recur frequently.

The condition is readily recognized, especially during or near labor, by feeling the placenta through the os. Its peculiar, irregular, though soft, surface, due to turgid vessels, and its spongy nature, are so peculiar that it cannot be mistaken for anything else. If not found at the os, its edge can be felt by the finger swept around inside the os—that is, in marginal cases. I was once called in to a supposed case of central implantation of the placenta, only to find a soft, smooth, blood-clot about one inch thick extending across the os. I pushed my finger through and felt the head. Then I still further dilated the already wide os, made counter-pressure over the belly, and had the child delivered in a few minutes. Placenta previa cannot positively be diagnosed unless this organ is detected by the finger.

Danger to mother and child, of course, from hemorrhage, is in direct ratio to the central attachment of the placenta and the inertia of the uterus. This is because the lower the attachment, the larger the bleeding area, and the more profuse the hemorrhage. Likewise, the fewer and feebler the uterine

contractions, the longer are the vessels left open, whereas they are effectively closed by uterine contraction. The mortality is various, but may be averaged at from 25 to 30 per cent. for the mother, and from 60 to 75 for the child. The danger to the latter is from asphyxia, but that of the mother is due not only to bleeding, but also to the numerous complications that may follow active interference, such as local or general septic trouble—so called.

The treatment may be expectant, or palliative, or final. Expectant treatment carries with it much danger and responsibility, for, if delivery is not begun at once, a recurring hemorrhage may set in at any time, and cause death before help can arrive. The only excuse for palliation is the desire to allow pregnancy to continue till a viable child may be born. The risk is so great, however, that it should never, in my opinion, be insisted upon by the physician, but the responsibility for the more dangerous course, that of delay, should be left to the patient and her friends. If bleeding, however, I should prefer immediate delivery or the surrender of the case to some one else willing to needlessly assume a terrible risk. The only palliative treatment is absolute rest in bed, together with opium, if needed, and a light diet. The danger is from a hidden commencing secondary hemorrhage, and the excitation of this very accident by reflex uterine contraction and consequent placental separation.

The final, or radical, treatment has in view, first of all, arrest of hemorrhage, and, second, the expulsion of the placenta, and firm contraction of the uterus. Many suggestions have been made for this emergency, some of them excellent and many indifferent, but no suggestions are so valuable as those which can be put in operation most often and with the least preparation. I know of no better way of arresting bleeding than by dilatation of the os and delivery of the uterine contents—in fact the best treatment of placenta previa may be summed up in the admonition to empty the uterus as rapidly as possible. As to dilatation of the cervix, I have found no greater and more efficient method than the use of the fingers. They are always at hand, and become more useful with practice, and they do their work rapidly. By making counter-pressure above, the finger may be pushed through quite a tight os. By hooking the digit and pulling, the os is soon stretched enough to admit the next digit. These further enlarge the opening by traction and divergence until a third may be added, thus continuing until the four fingers and thumb are engaged.

The liquor amnii may be drained away early in propor-

tion as the bleeding is profuse, and a hole should be punched through the placenta without hesitation if the edge is not found within easy reach of the os, for the danger to both mother and child is less from a hole in the placenta, that almost at once becomes plugged, than from extensive uterine and placental areas stripped of their attachment. The greater the bleeding, the sooner must the membranes be ruptured despite an undilated os, so that a foot of the child may be pulled through the opening to serve as a hemostatic plug. If this checks the bleeding, Nature may be allowed her own time to finish the labor. Traction upon the foot increases the pressure at the site of bleeding, and should be resorted to wherever needed. Delivery of the placenta should immediately follow the birth of the child. On top of all, it is well to give a hot 5 per cent. creolin or lysol intrauterine douche, both for its hemostatic and germicide effect, and because it stimulates the uterus to firm contraction.

Inasmuch as the danger from bleeding in placenta previa is at the attachment near the os, it is good practice to, at once, detach the placenta from all of the area so as to avoid repeated bleedings after one has already been arrested. This is not enough to kill a living child, and is manifestly of no consequence to one already dead. But, above all things, the treatment in this condition must be bold and prompt, but tempered with the best of judgment. It is not safe to leave a patient at all in this condition until the uterus has yielded up its contents.

CONCEALED HEMORRHAGE.

Concealed hemorrhage is a term applicable to any form of intrauterine bleeding, during pregnancy, that does not enter the vagina. It is almost always due to separation of the placenta from the uterine wall. It is one of the most dangerous complications of pregnancy, about one-half of its victims succumbing, while only 6 per cent. of the children survive. The very high infant mortality is caused by exsanguination of the mother, as well as lessening of the attached placental area, and hence abolition of, or at least fatal interference with, the respiratory function of the placenta. The condition is hard to diagnose early. The most marked symptoms are those which indicate great loss of blood, such as extreme pallor, cold extremities, sighing, quick breathing, weak and rapid pulse, a puzzled, anxious look, and thirst. Usually there is also severe pain. If there is loss of consciousness when the physician arrives, the condition may be confounded with a fainting spell, but not long, for the persistence of the condition would justify

a diagnosis of concealed hemorrhage. But the signs of excessive bleeding during the later months of pregnancy, with the patient conscious, makes the existence of concealed hemorrhage almost a certainty, and it is positively assured if conjoined with excessive abdominal pain. It will thus be seen that the diagnosis of this condition is easy enough when almost too late, but exceedingly difficult at its inception.

The proper treatment of concealed hemorrhage is simple enough in its indications, to wit: The immediate expulsion of the uterine contents so that the uterus may contract and thus prevent further bleeding. This is insured by rapid dilatation and the free use of an oxytocic, say ergot. The one great fact must not be lost sight of, that the uterus must be emptied as quickly as it can be done, and at any cost. Force must be used to dilate the os, vagina, and introitus. The os may be cut on one or both sides to aid dilatation, if rigid. It may subsequently be sutured. Delivery must be prompt, even if it cause a severe perineal laceration. Be it ever remembered that a torn cervix and perineum in a living woman is less serious than a dead woman with these structures intact. The one may be remedied, the other cannot.

Nor should the child be needlessly sacrificed. If still living, every effort consistent with the safety of the mother should be made to save it. But if it is dead, as is usually the case, the body may be mutilated, if necessary, to save the structures of the mother from damage, provided consent is first obtained from those in authority, for people differ widely in their way of viewing these things, and it behooves the wise man not to fall afoul of those who would take such a mutilation to heart, and bitterly resent it.

A recent case of mine so well illustrates this condition that its recital may serve a useful purpose:

Mrs. G. E. L., a native of the United States; married; 27 years of age; first confinement August 11, 1895, and expected her second confinement between the 5th and 10th of January, 1898. On Christmas day (December 25, 1897), she was taken suddenly with violent epigastric pain and vomiting at 6 P. M., shortly after finishing a hearty Christmas dinner at a friend's house about one and a half miles from her own home. She left for home as soon as the pain and the vomiting had sufficiently abated, journeying on a trolley-car. I saw her at 8 P. M., in her own bed. She still had some epigastric pain and some nausea, though she no longer vomited, despite occasional retching. There was neither uterine action nor tenderness, and the os was closed and high up and well back. I gave

her tablespoonful doses of paregoric at three-quarter-hour intervals till relieved, and 6-grain doses of acetanilid, with a little bicarbonate of sodium, every half hour, either until easier, or until four doses had been taken. I also ordered a sinapism to the epigastrium.

Called in again at 10 P. M., I found the pain so exceedingly severe that I gave $\frac{1}{2}$ grain of morphine and 1-75 grain of atropine hypodermically. Immediately afterward, she complained temporarily of a peculiar indistinctness of vision. The tongue was coated. The os was soft, and admitted a finger. The fetal head was easily felt through the anterior uterine wall. The uterus was soft, except a slight hard projection at the right of the fundus, presumably due to a foot or knee. The vagina was well lubricated with mucus, but there was no show. She sank into a quiet sleep without a sign of commencing labor, and her pulse was natural.

The next morning, I was hurriedly called at 6.30 o'clock, because she was "flooding." I saw her at 7.30 A. M., and found that she had passed "half a chamber of blood," under the impression that she had ruptured the membranes, upon which point her husband had been wise enough not to correct her. She was not flowing upon my arrival. The os was about $2\frac{1}{2}$ inches in diameter, but there were no uterine contractions, and there had been none. Though the os was flacid, the membranes were fairly tense. This was suggestive of intra-uterine pressure without uterine contraction—of bleeding with incarceration of blood between the uterine wall and the membranes. Her pulse was 104, and rather weak and small. I gave 10 grains of quinine at once, and sent for ergot (which I did not have with me). At 7.45 A. M., I gave $\frac{1}{2}$ dram of the fluid extract of ergot, and she began to bleed again almost at once, the flow presumably being largely due to the expulsion of already extravasated blood. But she soon became pallid and thirsty. I kept my finger in the os, dilating it forcibly, while I rubbed and massaged the fundus and bore down upon it with the other hand. This excited some contraction, besides which I had her bear down. In fifteen minutes (at 8 A. M.) the os was 3 inches in diameter, and I ruptured the membranes with a hairpin. The position was l. o. a. I continued digital dilatation and manual expression, while she kept bearing down as much as her strength would permit.

I then pressed very firmly against the coccyx with almost enough force to break it off, hoping by thus simulating the passage of the head to incite stronger reflex expulsive efforts. Nor was I disappointed, for the uterus contracted vigorously

and forced the head down. From the coccyx I slowly passed the fingers along the posterior vaginal wall, pressing back and pulling down, closely imitating the effects of the descending head. The head followed promptly to the perineum, and was born without further uterine contraction, being shelled out at 8.07 A. M., thirty-seven minutes after my arrival, or twenty-two minutes after beginning dilatation, and seven minutes after rupture of the sac. Both perineum and cervix remained intact.

The umbilical cord was turned about the child's neck, was pale and flaccid, and its vessels entirely empty. The body shortly followed the birth of the head. The child was limp, and had probably been dead several hours. The placenta was delivered bimanually, coming away readily and without discomfort. A large gush of blood, both liquid and clotted, followed the birth of the head and also that of the body. After placental expulsion, the uterus contracted well, and the patient felt comparatively comfortable.

The placenta looked abnormal, having a firmer consistence than usual, and an irregular, furrowed, or ridged appearance, together with a scattering of firm yellow nodules throughout its surface. Only small portions of it had a normal appearance.

At 8.25 her pulse was 132 and small. At 8.35 it was 130 and stronger. She was given some hot coffee at 9.05, and at 9.20 her pulse was 120 and fuller. I then left her, but without using a binder or giving her an injection. My instructions were to give her all the liquids she could drink, and as much of the most nourishing food she could be induced to take.

Calling again at 4.40 P. M., I found the pulse 88 and full; the tongue was still a little coated; there was some appetite; she had vomited some mucus; the epigastric pain had entirely gone; and the uterus was well contracted. She was ordered meat, eggs, and milk *ad libitum*, according to appetite, together with pepsin.

The next day (27th) her belly was a little distended, tympanitic, and sore, but soft. She had passed a few small clots, and there was a slightly bad odor. Pulse 88 and very good. There had been no stool since her labor. She was eating heartily. I gave a vaginal injection of three quarts of about 5-per-cent. creolin solution, after which she felt much better. I ordered it repeated every three hours, and she took some compound licorice powder.

She was much improved upon the following day, and had a normal stool. Her breasts troubled her on the 30th, but yielded promptly to inunctions of camphorated oil. On the

30th, she began taking 1-16 grain of the arsenite of iron four times daily, and her color began to improve after twenty-four hours. She was up on the 5th of January, and I discontinued my visits two days later.

I may add that she ate her meals sitting up in bed, beginning with the morning following her confinement. It seems to me that the hard lump that I found upon the right side of the fundus the night preceding her labor was a bulge in the uterine wall due to the bleeding. The severe pain she suffered was, of course, due to the forcing apart of the placenta and uterine wall by the extravasating blood, for anyone who has ever had to strip the placenta from its site knows the pain it causes. Had I suspected a concealed hemorrhage the night I gave the hypodermic injection, and examined that hard lump upon the right of the fundus more carefully than I did, I would, probably, have noticed its fixed position and marked tenderness, thus precluding its being caused by a part of the child. The prompt induction of labor at this time might have saved the child's life, though this is not certain, for the reason that fetal movements had stopped some time before I was first called in. I believe that this woman's life was saved only by the prompt delivery of the child and placenta, and am so convinced of the importance of prompt delivery in these cases that the child should be delivered through the mother's belly-wall when there is undoubtedly a severe concealed hemorrhage associated with a closed os and a narrow pelvis, or when prompt delivery is made impossible by any other immediately irremediable obstruction. A prompt, clean, and careful laparotomy is much safer than a hurried forcible delivery through an unusually-obstructed canal.

Chapter VIII.

THIRD STAGE OF LABOR.

From the time the babe is born until the physician feels safe in leaving the mother, is usually held to be the most dangerous period, and it probably is in most instances. There are many dangers in this brief period, and all the greater because they cannot be foreseen. There may be free bleeding from the placental site, or from a tear of the cervix or perineum; there may be irregular uterine contraction (hour-glass), or the placenta may be adherent; there may be various injuries to the parturient canal, with or without forceps delivery. The mother may suffer with shock.

It is very important to get away the placenta without undue delay, secure good contraction, and check all bleeding other than the normal oozing or discharge called the lochia. Usually Nature does this herself, and requires no assistance. Immediately after the birth of the child, I keep my hand upon the fundus uteri, gently massaging it all the while, and sometimes squeezing it firmly. Every now and then it gets very firm and then relaxes. I seldom get after the placenta either until the uterus has pushed it well into the vagina after one of its periodic contractions, or after several of these when the placenta is still evidently within the uterus, as may be inferred from this organ's large size under the hand. If there is undue bleeding, I deliver the placenta without delay. In over twenty years' experience, I have had but few post-partum hemorrhages, and I cannot recall an instance in which it could have been avoided. So long as the uterus is not well contracted, there is danger of severe bleeding, and it cannot be well contracted so long as it contains the placenta.

One often sees the rule to wait fifteen minutes for spontaneous placental expulsion, and, if this does not occur within that time, to express or otherwise deliver it. Now, it is just as senseless to specify any particular time-limit in this matter as it is in either of the other two stages of labor. The only correct rule is to deliver the placenta manually whenever the best interests of the patient require it, and this is a matter of individual judgment in which the patient, the environment, the personality of the physician, and his opportunities for help,

besides other factors, must all enter into the estimate. When once I have determined that the placenta is to be removed, I go to work at once and extract it without delay. While one hand bears down upon the fundus, the four fingers and palm of the other are passed into the vagina, where part of the placenta may usually be found the first few minutes after the cord is cut. My practice then is to slip the back of the index finger as far up as possible against the placenta, and the palmar side of the middle finger up along the other side of the placenta behind the index finger. The tip of the middle finger is then pushed forward, usually partly or entirely through the placenta, toward the index finger, and with the two thus firmly clutching the mass, it is drawn down, or coaxed a little laterally, while the other hand pushes down from above, at the same time squeezing the uterus. This brings it down without delay, unless still attached, but even then a little coaxing often brings it away.

If the placenta is entirely within the uterus, my whole hand goes into the vagina, and the fingers and palm only into the uterine cavity, though the thumb and entire hand also pass into this without the slightest hesitation, if at all necessary. While it is unquestionably much safer to do this after having cleansed the hand in an antiseptic solution, I have often done it without a particle of antisepticism, for the opportunity to do so was not available, yet even in these cases there was no subsequent septic infection.

Years ago, when I made post-mortem examinations almost daily, and as many as six in one afternoon, I frequently encountered bodies, especially morgue cases, covered with lice. Now, while many others hesitated to take hold of these cases, particularly to remove the brain, it never troubled me, though the hair was swarming with vermin, because, after rolling up my sleeves above the elbows, and having both hands and forearms covered with blood from the examination of the trunk viscera, the pediculi capitis could make no headway through the sticky blood. They adhered wherever they landed. When this peculiarity is borne in mind, it is difficult to see how a microscopic germ can, in a few moments, work its way from a sticky, coagulating substance, and through and against a current of similar material, to the maternal tissues, there to spread infection. I never could see it that way, and have never observed bad results following the common-sense lesson it teaches. The extraordinary brushing under the finger-nails that some individuals practice is also an absurd overprecaution in view of the fact that the space between the nail and finger-

pulp becomes sealed in a few moments with coagulated blood, the space becoming, for the time being, hermetically closed.

RETAINED PLACENTA.

By the term retained placenta is meant any failure of placental expulsion due to uterine inertia, either partial or complete. It does not, for instance, include retention due to adherence, nor is it intended to comprise the many instances in which the after-birth lies wholly in the vagina.

General uterine inertia, in these instances, may be due to general asthenia of the patient, to uterine overwork during fetal expulsion, or may quite naturally follow anesthesia, or instrumental extraction of the child from a non-contracting uterus. Placental retention in a uterus that has "struck work" for a time need not be interfered with at once, so long as there is no bleeding. The best method of removal I find to be by combined traction and expression, as already described in these pages, care being taken to draw upon the edge of the placenta instead of upon the cord.

Partial, or incomplete, inertia of the uterus is due to similar causes as the complete conditions, and it may be due to reflex from other organs. It may even be due to the irregular action of an oxytocic. This condition is more difficult to treat than the preceding, for while contraction is to be excited in one part of the organ, relaxation is required of another part. Hour-glass contraction is a condition of partial inertia. Here the spasm must be overcome, while the relaxed part above it must be made to contract. If the constriction cannot be effectually dilated with the fingers, and the placenta grasped and extracted by means of added expression from above, without an anesthetic, chloroform should be given, and the procedure repeated. Temporizing in these conditions is not wise, for the reason that it adds to the danger.

In other instances there may be spasmodic closure of the cervix with relaxation of the body of the uterus, and, added to this, may be severe bleeding. This condition is more readily relieved than the hour-glass condition because the constricted site is within easier reach. It is always well to bear in mind the fact that the parturient womb has what is called a polar action, by which is meant that when the body contracts the cervix dilates, and *vice versa*, thus enabling us to judge of the state of the uterine body by that of the cervix, the former being relaxed if the latter is contracted. The practical application of this principle often aids the diagnosis of complications.

ADHERENT PLACENTA.

By adherent placenta I mean the genuine instances of its organic adhesion to the uterine wall, entirely or in part. It is usually accompanied by fibroid degeneration of the attached portion. The condition is stated to be comparatively rare, in which event I have had the rare good (?) fortune to already see more cases of the kind than constitutes the allotted share of the general practitioner. Coincidences of this kind often happen, and I may have seen my last case for years. The diagnosis is not made at once because not manifest, except by persistent detention, and, usually, hemorrhage. The condition is not positively ascertained under any circumstances, however, until detected by the fingers within the uterus, previous to which time it can only be expected.

The condition is a dangerous one, first, from excessive bleeding, sometimes very profuse, and, second, from possible septic infection due to the breaking down of retained portions detached from the placenta in its removal. The former is guarded against by prompt and rapid removal of the placenta, and the latter, by thorough and, if necessary, repeated antiseptic intra-uterine douches.

The best method of removal is with clean fingers passed up between it and the uterine wall, while the uterus is steadied through the belly-wall with the other hand. The process is simple and easy, but is usually extremely painful, sometimes much more so than severe labor-pains. No time should, however, be lost giving an anesthetic, as those are usually emergency cases calling for great promptitude. I have always found uterine contraction good after removal, and this is to be expected because of the tremendous stimulation incident to the forcible separation of the adherent mass.

I would suggest the observance of a simple rule in these cases, namely: the close hugging of the uterine wall with the backs of the fingers and finger-nails engaged in the separation of the placenta, thus insuring the detachment of this organ as completely from, and as close as possible to, the uterine wall, and so leaving little if any, material to serve as foci of septic infection. A hot intra-uterine antiseptic douche should follow at once, and with a similar treatment of the vagina, especially about the cervix, and of the vulva. Generally, this suffices, and no further local treatment is required. Though usually an extremely painful process during its performance, there is no serious discomfort afterwards.

My earliest case, at least so far as my recollections go,

was that of a young German primipara. The labor was normal, and the birth occurred in a so-called dark bedroom in one of the tenements of Brooklyn, N. Y. It was in the gray of the early morning. Everything had progressed well, my hand lay upon her hypogastrium, gently stroking the uterus through the belly-wall. The womb was hard, but large, rather wide and flat, with a well-defined upper arched margin. At the end of fifteen minutes my patient heaved a long sigh, which aroused my suspicion of serious bleeding, though the uterus was hard. I called for a lamp, found her usually ruddy lips pale, her face wan, and her expression weary and anxious, all in decided contrast to her buoyant and cheery bearing of a few moments before. Examination revealed a large clot between her thighs, with blood flowing freely from the vulva. Without an instant's hesitation or delay, I passed my entire hand into the vagina, and thence through the cervix, at the same time commanding the husband, a large strapping man, to bear down upon my other hand resting upon her belly. I further told him that I would hurt his wife very much, but that it would only continue a moment or two, and that he was to restrain her from interfering with me, no matter what force he had to use, as her life depended upon what I was about to do. He did his work manfully; she screamed with all her might, and I ploughed and dug at the worst case of adherent placenta I have ever encountered. With the exception of a space, about the size of a silver dollar, at the lower edge of the placenta, the entire surface was adherent, and there was not a square inch that did not require active digging and pushing with my finger-nails, which were, fortunately, rather long, to separate the placental mass from the uterine wall. The entire process required probably ninety seconds despite the utmost despatch and vigor. The house and neighborhood were aroused by her screams, and at the conclusion of my labors she was almost exsanguinated, and I had a thick and firm placenta, about as large as a soup plate, and so firm that it could be held out horizontally by holding on to the edge, only bending slightly. In color, it was gray, except the section the size of a silver dollar; it was very fibrous throughout. Though neither antiseptic nor intra-uterine douche was used, she made an uneventful recovery other than the setback due to extreme loss of blood!

This case occurred nineteen years ago, but I had one almost exactly similar eight years ago, in which the utmost promptness was also required, and in which the patient's life was saved, though in the most imminent peril from rapid bleeding. So intent was I in my work in this instance, that I

complimented the woman upon her wonderful stoicism for not crying out, only to be informed that her screams during the procedure had been extraordinarily loud and vigorous. She, too, made an uneventful recovery, and the intra-uterine antiseptic douche was used in her case. In each of her other two confinements, she had had adherent placenta, thus causing the fear that she would be similarly troubled again, and which she dreaded worse than the usually very painful confinements, because of the greater pain of the forcible removal of the placenta. In her case about two-thirds were adherent.

Some of my cases have had but a small area attached, and these are separated readily and with comparatively little pain. I may add that the cause of the bleeding in adherent placenta is practically the same as that in placenta previa. The uterus sheds the normal portion of the placenta shortly after the birth of the child, and then bleeds, as it cannot contract because the attached portion keeps the uterine wall spread or braced apart.

INVERTED UTERUS.

This is, most fortunately, a rare condition now, whereas it was formerly quite often encountered. Its commonest cause years ago, and not so many years either, was placental extraction by traction on the cord, though even it is not likely to follow this course unless the uterus is in a very atonic and flabby state. Intra-uterine fibromata, myomata, and polypi are apt to cause inversion after expulsion of the fetus, the fundus following the neoplasm in its exit, and thus, in turn, being forced through the cervix by its own muscle fibers. Sometimes a flabby portion of the uterus sinks between the surrounding healthier wall, is caught between the contracting fibers, and is steadily forced farther and farther down until inversion is complete; or the fundus may remain well contracted while the lower uterine segment remains relaxed and flabby with the cervix wide open, thus permitting the fundus to fall down, when, by its presence between the walls of the lower segments, it acts as a foreign body, stimulating the flaccid wall to contraction, and insuring its own extrusion through the cervix. Extensive pains, recto-vesical pressure, bleeding, and shock constitute the symptoms of this condition, while the absence of the fundus above the pubes, and its lodgment in the cervix or vulva, or even farther down, are the positive and unmistakable signs. Sometimes the placenta is still attached to the uterus. It must be promptly stripped off.

Reduction is often extremely difficult, and yet must be

promptly attempted, for shock may kill the patient within an hour. To guard against this fatality, opium should be given, say $\frac{1}{2}$ grain of morphine and 1-75 grain of atropine hypodermically. This should be followed by chloroform with nitrate of amyl by the method already described. The hips should be elevated, the thighs flexed upon the groin, and reduction attempted inversely as it occurred. The fundus is to be covered with a soft antiseptic cushion, say of sponge, gauze, or cotton. Gentle pressure is then made bellywards, while the fingers compress the neck of the inverted mass, thus coaxing the mass to uncoil itself. All attempts at replacement failing, the patient may be treated expectantly if there are no bad symptoms, but if these arise the mass should be amputated, and for this purpose no method equals the galvano-cautery, both for promptness and bloodlessness. The ecraseur has been used for this purpose also, and it is efficient. The belly has been opened, and the abdominal os, as it might be called, of the uterus dilated while the involuted mass was pushed up into position. It may be a nice point to decide whether to do an abdominal hysterectomy or a galvano-cautery amputation *per vaginam* of the extruded mass. The latter amputation, if done well up, would really be an amputation of the uterus above the cervix, and is preferable, in my judgment, to an abdominal hysterectomy, because simpler in performance and practically devoid of all danger. The galvano-cautery, be it ever remembered, is aseptic, not only over the surface of operation, but all along the operative tract for some distance into the tissues.

LACERATIONS.

As to whether or not to sew together a torn cervix or perineum is often a nice question. Sometimes I do it and at other times I do not. A large per cent. are bound to be failures for many reasons that need not now be gone into. Small lacerations would better be repaired within a couple of days. I think primary union is more apt to follow after the oozing and swelling have subsided. It is useless to put in stitches when the perineum is distended by swelling, for within a day or two, at most, the swelling goes down, the stitches become loosened in consequence, and the wound-surfaces separate. Unless the conditions are favorable, therefore, it is best to do a secondary operation later on, say within six or eight weeks. The same reasoning applies alike to the cervix and the perineum.

Sewing a perineum without giving an anesthetic seems to

me indefensible. The pain is excruciating. I know of one case in which four stitches were introduced twenty-six hours after delivery, without the use of an anesthetic. The patient said the pain was much more severe than when she was in labor. The giving of chloroform in the way I have described is so simple and devoid of trouble that it need not be withheld to save trouble or time, for it really saves both.

When I learn of a physician who proudly "asserts" (I should say "boasts") that he has never had a perineal laceration, I am satisfied that he is either a practitioner of limited experience, a careless examiner of his patients after labor, or that his egotism forces him to willfully misrepresent the facts. For some years I was also able to say truthfully that I never had a case of laceration of the perineum, excepting several precipitate labors in which both occurred before my arrival. But I have since had cases of rapid, unretardable, delivery in which the perineum gave way because of steady rapid overdistention. The head sometimes comes down with so much force back of it that it is impossible to restrain it. I have seen some cases of a justo-major pelvis, associated with rigid perineum, in which rupture could not be avoided, not even by previous forcible digital dilatation, for there was not time.

I have delivered primiparæ without a rupture even of the fourchette, shelling out the head between pains, the patient aiding by gently bearing down. If all cases were as easy as these, it would be bad practice to ever have a perineal laceration. But all cases are not alike.

THE BINDER.

The binder is another heirloom of the past, our deference to custom, the result of deference to authority long ago gone to its final account. I believe it to be one of the most prolific causes of post-parturient trouble of the pelvic contents, especially of displacements and subinvolution. It jams the uterus back or down into the pelvis, and retards its return circulation, thus causing passive congestion and encouraging passive bleeding, and this interference with free circulation hinders involution. Local congestions are manifested by local pain that is relieved by shifting the position of the patient. Even a uterus not bound down by the binder becomes saggy and congested in its most dependent parts if the woman is permitted to lie too long in the one position. I have seen this many times, for I have made numerous autopsies upon women who have died all the way from a few moments to

several days after confinement. It must not be forgotten that the uterus does not very long remain the hard ball it is just after placental extrusion. Upon the second day it is usually quite soft—in fact it is often so after several hours. I have seen it so molded to the shape of adjacent organs that it bore their impress, and was marked by ridges indicating the edge of the area of their pressure. It needs nothing but the plainest common-sense, therefore, to see that it is detrimental to hamper the uterine circulation in any way, because even the danger of septic infection is thereby increased, for does not Nature at once increase the local blood-supply and cellular activities, as is manifested by increased circulation, heat, redness, and tension of the parts when endangered?

Every practitioner, even if of limited experience, is familiar with the numerous superstitions that cling to the lying-in-room. They tenaciously refuse to be driven out. The old idea of feeding a patient on "slops" for nine or ten days still has its many strenuous advocates. And they, often enough, have their own way despite all that the doctor can say or do. One of the usages of the past that for some time still threatens to plague us is this selfsame binder. Its use has, however, had the sanction of the highest authority during a long past; it is destined to linger a long time after science has decreed its banishment. That it is doomed, however, is shown by the following facts.

That it increases the intra-abdominal and intra-pelvic pressure cannot be denied. It means undue compression of the uterus, and interference with the freedom of its circulation, notably the return flow of blood. This means passive congestion and a soggy uterus. Nor is this all, for subinvolution is thereby almost assured, certainly a retarded involution. But a preternaturally enlarged uterus that is passively congested, and that has been subjected to the backward and downward pressure of a binder, is very liable to retro-displacement and prolapsus. These are common enough sequelæ of parturition aside from perineal laceration. Endometritis and leucorrhea are natural effects of these conditions, the one entailing the other.

The ovaries are likewise affected by the lessened mobility and hampered circulation. They also become congested, and, being composed externally of thick, dense, unyielding, white fibrous tissue (the tunica albuginea), they become very painful and tender. Irritable ovaries, so often a residue of parturition, are frequently ascribable to the binder, especially a very tight one long applied.

The passive congestion of the pelvic contents and floor resulting from a tight binder continually employed, retards healing of wounds, thus, in all probability, frequently making a perineorrhaphy necessary because of retarded union, where, without the use of the binder, sufficient union might have been secured to leave a useful perineal body.

The effect of the binder upon the bladder, especially if it is reinforced by a hypogastric pad, is marked. As this viscus distends because of the accumulation of urine, it usually mounts upward toward the umbilicus, and forwards. The binder prevents the latter and hinders the former. It forces the viscus to also press downwards in the direction of least resistance. The result is a bulging of the anterior vaginal wall, a commencing cystocele, and a partial prolapsus of the urethra. A pocket is thus formed at the base of the bladder for the retention and decomposition of urine, causing in its turn vesical irritability that may become chronic. A train of ills, including the unhappy hypochondriasis of vesical disease, may also follow, forming a picture which the clinician deems. The passive congestion that results from the use of the binder not only affects the uterus and its adnexa; it is equally as potent in disturbing the circulation of the bladder.

The rectum does not escape the general sluggishness of the pelvic contents caused by the persistent use of a tight binder. Nor is it possible for fecal accumulations to pass through a compressed and passively congested bowel as readily as under normal conditions. The effect of increased pressure in an exaggerated form is often witnessed in the turgescence, varicosities, and protrusion of the hemorrhoidal veins at the verge of the anus and within the grasp of the internal sphincter ani. Piles thus produced, or those previously existent but aggravated by labor, are more apt to continue during the use of the binder than they are to disappear. So also does this unscientific appliance aid and abet constipation, for the relief of which the patient is required to take medicines, which could be obviated by less interference with the reparative work of Nature.

Hypogastric pain and backache, with, probably, dysuria and piles, thus not only often become an avoidable accompaniment of the irksomeness of the lying-in period, but may be indefinitely perpetuated long after the pelvic organs should have assumed their normal state. The indirect effect of this continued persistent suffering upon the mother results in lost or defective sleep, irritability, nervousness, anorexia, impaired

nutrition, loss of weight, neurasthenia. This inevitably entails deficient quantity as well as quality of breast-milk. The child then suffers. It is starved or it is bottle-fed. It may suffer all the penalties of deprivation of good natural food.

These remarks are not intended to imply that this entire train always follows the persistent use of the tight-binder. Sometimes it does no damage at all. Occasionally some one falls out of a four or five-story window without sustaining any injury, and yet it does not become an advisable practice because of such exceptional immunity. Let us not too readily accept all that is handed down to us from the notables of the past. Many usages have nothing but custom to commend them. Their effects have not been studied. Those practices which cannot successfully withstand the test of impartial examination and critical reasoning should not be permitted to stand at all, however great the authority from which they may have received their first impetus and subsequent support.

POST-PARTUM HEMORRHAGE.

To arrest bleeding, whether from a uterine cavity or a traumatism that does not require a ligature, I prefer an injection of hot water, usually a bichloride of mercury, carbolic acid, a creolin, lysol, or formalin solution, or vinegar and water, the last being, probably, the most reliable as well as the most readily obtainable.

Assuming that labor is a natural process, I never interfere without a clear indication. This is my routine practice, if such it may be called. Therefore, I do not give ergot after the birth of the child unless the preceding sluggish action of the uterus, or hemorrhage at the time, indicates an oxytocic. At this time, and under such conditions, I prefer the fluid extract of ergot in suitable doses. If the bleeding is severe and persistent and intra-uterine, I give the ergot hypodermically in the hypogastrium, or in the side or front of the thigh. I give a syringeful (half a dram) in this way, and perhaps a dram besides by the mouth. The injection is painful, and is likely to cause soreness afterwards for a number of days, but I have never had an abscess result, though it seems to have done so occasionally with some others. The difference I attribute to good fortune—a mere coincidence. In the first few years of my medical career I used ergot regularly in all cases, and I must say that I believe most women get along better without it when they do not positively need it.

SUDDEN SEVERE POST-PARTUM HEMORRHAGE TREATED BY
UTERO-VAGINAL TAMPONADE.

Dr. Joseph B. Delee, of Chicago,¹ dwells at length upon the blood-stopping qualities of a gauze packing of the uterus in the most severe forms of bleeding. Briefly, the cervix uteri is pulled down to the vulva with vulsellum forceps, an assistant holding the one attached to the anterior lip while the operator holds the one grasping the other. Five yards of one yard wide sterile or antiseptic gauze, previously wrung out of hot lysol solution, are then gradually and firmly packed into the uterus from a bottle held close to the vulva. The first packing is made firmly against the fundus. After the uterus is filled, the vagina is packed with cotton. There is no tendency for the blood to ooze and distend the uterus. If there is a little oozing, the lips of the cervix should be sewed together temporarily, when the oozing stops at once. The vaginal tampon is removed in twenty-four hours. Sometimes, also, the one within the uterus, but often not until a day later.

The author very properly dwells upon the obligation resting upon the obstetrician to attend every confinement fully equipped, in mind and paraphernalia, to combat all emergencies, most important of which is hemorrhage, which should always be "previewed." He makes the wise suggestion that I, too, have oftentimes urged, that compression of the abdominal aorta checks excessive bleeding, and gives those needing it "time to collect their wits," and, to which I may add, to arrange for tamponing.

The doctor claims this to be a new departure originating in Europe, and used and published here first by himself. In this he errs. Current American literature has several times during 1898 and 1899 been graced with allusions to this subject, and by several articles, the exact time and place of publication and authorship of which I cannot recall.

Dr. Delee, is right, however, in urging the importance and desirability of giving this method a full trial. It is correct in principle and efficient in practice. The introduction of an absorbing and stimulating substance within a bleeding contractile cavity is correct. It should also be clean and aseptic. There must be no force used in its application. Its withdrawal should be gentle. Nor must the practitioner be misled by the allusions to gauze and vulsellum forceps. At such a time, one of life or death, anything that tends to save life is better than death through neglect of any expedient to ward it off. Anything that will draw down the uterus to the vulva, a procedure

¹ In the *Journal of the American Medical Association*, April 15, 1899.

in itself enough to much lessen the bleeding, should be employed, a couple of clamped sticks of wood sufficing if need be, or a heavy thread through the cervix. A bed sheet could be torn and used after being wrung out of a solution of lysol, vinegar, borax, or after having been boiled in water. This is not a desirable procedure, but it may occasionally save a life otherwise doomed. Adhere not too much to the letter of the law—but to the spirit.

ARREST OF POST-PARTUM HEMORRHAGE BY PULLING DOWN THE UTERUS.

Dr. Arendt¹ reports his experience in arresting post-partum hemorrhage due to uterine atonicity, in eleven cases, by a new method. It consists in seizing the cervix with one or two blunt forceps (say, bullet or polypus), and drawing it down to the vulva. This so kinks the afferent vessels as to stop the flow of blood through them. Uterine action is excited by alternate traction and relaxation. He believes that tamponing of the uterus is effective mainly because of the incidental pulling down of the uterus. This is certainly a valuable point, if reliable. I have not yet had occasion to test it.

GELATINE AS A SUPERIOR HEMOSTATIC.

An interesting and valuable discovery is the blood-coagulating quality of gelatine. This was made by Dastre and Floresco, as announced in the *Archive de Physiologie* of April, 1896, after the report of their experiments the preceding February before the Society of Biology. Later, in the September 18th number of the *Presse medicale*, Dr. Paul Carnot took up this subject, and in its consideration divided hemostatics into those which act by causing vascular contraction (like ergot), and those which seal the vessel openings by coagulating the blood (as styptics). He very properly objected to the use of the former whenever they can be avoided, for the reason that the plug of coagulated blood fitting the constricted vessel becomes too small after vascular dilatation, and thus leads to renewed bleeding.

That the gelatine solution causes actual coagulation of blood, and does not seal the vessels by merely gelatinizing, is proven by its being efficient in solutions too weak to permit gelatinizing. It is made up preferably with a sterilized normal salt solution, and to this an antiseptic may be added. Thus 7 parts of sodium chloride are added to 1,000 parts of water. Gelatine is added to make a 5 to 10 per cent. solution. This is then boiled twice for fifteen minutes two days apart,

¹ Vol. xii, No. 1, of the *Therapeutische Monatschrift*.

care being observed not to let the temperature reach 239° F., as that sometimes destroys its value.

He used this preparation in persistent nose-bleed in a child that had nearly bled itself out, and in which the usual styptics, such as the perchloride of iron, had proven unavailing. An injection of a 5 per cent. gelatine solution stopped the bleeding at once. On the next day the other nostril bled, and it was stopped with equal promptness by the same means. This was effective despite the fact that the child had successive purpuric hemorrhages under the skin, and mucous and serous membranes, and finally died with only 365,000 red corpuscles to the cubic millimeter of blood.

The solution should be used at the body-temperature because it causes vascular contraction if used hot, thereby temporarily arresting the flow, and preventing coagulation, or causing the formation of the small plugs in the contracted vessels that might lead to subsequent hemorrhage when the vessels again expanded, as in the case of those hemostatics acting by vascular contraction. It need not be given in hematemesis, because its blood-coagulating quality is destroyed by the gastric juice.

He has only used it once to arrest uterine hemorrhage, and that in case of metrorrhagia caused by a fibroma. In this instance its action was wholly satisfactory. One point not to be forgotten is, that it must be injected into the cavity of the uterus to arrest hemorrhage from its walls, for it must come in direct contact with the blood as it leaves the vessels.

In experiments upon dogs, he repeatedly arrested bleeding from the freshly-cut surface of the liver by a few seconds' contact with the gelatine solution, but without exerting any pressure.

This is an agent that should not be overlooked in case of persistent bleeding. It is especially worthy of trial in severe uterine hemorrhage, especially post-partum. It is inexpensive, readily prepared, may be sterilized, and promises more than any other agent we have. But the caution to use it only at about the temperature of the body must not be overlooked. There are cases of menorrhagia and metrorrhagia in which it should be of great service, especially in such as are due to conditions only relievable by operation, and in which operation is refused, is postponed, or is no longer justifiable. By its means much time may be saved in perineal and cervical plastic operations in the prompt arrest of oozing, thus permitting the earlier approximation of the surfaces.

This new hemostatic is worthy of prompt and thorough trial, with the early recording of results.

Chapter IX.

AFTER LABOR.

A DUTY OF THE OBSTETRICIAN.

When a woman is delivered of a living child, and she passes through the puerperium within a couple of weeks so as to be able to be up and about her usual duties, most physicians are convinced that they have done their full duty. But it is not enough to save the life of the child, and see that the mother does not lose hers. It is generally accepted that a laceration should be sewed up at once, or that a secondary operation should be recommended at the earliest practicable date. In other words, so far as perineorrhaphy and trachelorrhaphy are concerned, it is the generally-recognized duty of the obstetrician to keep the patient out of the hands of the gynecologist. Less understood, and by no means so well accepted, is the larger logical fact that these cases should be kept from the gynecologist whenever possible—not that he is such a bad or dangerous fellow, for he is very useful, but because most cases that come to him as the result of childbearing are living indictments against the attending obstetrician.

Many of the chronic or subacute ailments of married women have their beginning in parturition. Involution of the uterus is not perfected. The heavy sub-involuted organ sags in the pelvis, its bloodvessels are kinked, circulation is retarded, passive congestion ensues, and secondary changes gradually take place, with a gradually-growing symptom complex. Then they are ripe for the general practitioner, possibly the one who should have prevented it. After a time, the patient gets tired wasting money upon the doctor who should have prevented her trouble and who cannot cure it, and then she goes to the gynecologist. He reaps his harvest at the expense of the patient, and occasionally even he does her no good.

The avoidance of these troubles is much simpler than their successful treatment. The first essential to proper uterine involution is a free circulation through the vessels of the uterus and its adnexa. This is best insured by frequent change of position, with the occasional assumption of a sitting posture,

together with an abundance of nourishing food. The binder hampers free circulation, and should not be used. If involution progresses slowly, it is hastened by the use of ergot and *cimicifuga*. To insure the restoration of the uterus to its normal size, patients should be urged to report for examination at the end of six weeks after labor, when involution should be complete. If it is still too large, appropriate treatment is to be instituted. If there is any pelvic exudate, ovarian tenderness or uterine fixation, this should receive proper attention. To neglect these precautions is bad practice, and is usually due either to carelessness or ignorance, and both are inexcusable.

THE DOUCHE IN OBSTETRIC PRACTICE.

Those who have been in practice a couple of decades can recall the treatment of women in and after labor without the use of the douche. This had its self-evident drawback. Following the quite general acceptance of the germ theory of disease, the use of vaginal douches during and after labor became a routine procedure with most obstetricians, notably in hospitals, and particularly the use of several antiseptic douches daily after labor. This, too, had its drawbacks. At present we have given up both extremes, but we cannot, in a general way, be said to have reached the oft-quoted happy medium. We are rather in an intermediate, chaotic, state ranging all the way between both extremes, with each of these still able to boast a fairly numerous following.

There are a few men who resort to the most extreme measures to insure antisepsis, and yet, and almost necessarily, are as inconsistent as others. Thus, one man at an expense of thousands of dollars, including the rebuilding and furnishing of a suite of rooms, sought to protect his wife in her approaching confinement. While all these preparations strike us as ridiculously absurd, the man deserves credit for hesitating at no expense to guard his wife and future offspring against all possible danger from external infection.

Then there are other men, and these are more numerous, I am sorry to say, than the preceding kind, who seem to revel in dirt, and pride themselves upon their fortunately not high death-rate, as if good luck and unusual resisting powers of their patients was attributable to the rare skill of their medical attendants.

Still another class are careless, too much so, some of them, to learn enough of the question to pass an intelligent judgment upon it. They are easy old shoes, letting the whim of the patient and the opportunity for its gratification decide

whether antiseptics and douching shall be used or not. There is a lazy indifference about assuming extra trouble that can be avoided. They are corks upon the river that go with the tide, and they are no good, not even as useful as the revelers in dirt, because they are all things to all men and really nothing to any of them. They avoid antiseptics wherever they can because it is too troublesome, and they pretend to use it, or use it partly, when it is believed they are doing so properly.

But the mass of the profession to-day is tending to the common-sense happy medium in regard to the use of the antiseptic douche in labor. Realizing fully the dangers that threaten a woman at this time from outside infection, they have also the good judgment to recall the fact that Nature usually provides her own safeguard, and a most efficient one at that, as it must necessarily be in its gradual development through serial stages of natural selection. She has done this work remarkably well during many centuries, and is as capable as ever to shut out infection unless handicapped by some accidental, or otherwise associated, condition not inherent in the normal parturient process. It is, thus, only exceptionally that Nature cannot, unaided, protect the individual from outside infection. It is then, and only then, that extraneous aid is not only advisable, but necessary.

Those physicians are the best practitioners who are sufficiently judicial in those matters to use the douche and general antiseptic treatment only when it is indicated. The routinist is always meddlesome and often dangerous. Many hospitals had a larger proportion of childbed fever cases after the introduction of the routine use of the douche than they had before it was introduced as well as after it was stopped. I could cite one in which the routine use of the douche was practiced for two years, during all of which time there was more childbed fever than in any equal period before or since; and this had all been predicted, and the "corn" was acknowledged with reluctance, and the practice discontinued only when the evidence was overwhelming.

When, then, is the douche indicated? becomes the all important question, to which must be added, and how is it to be used? I should say that a normal labor, conducted in a cleanly manner, requires no douching—and no ergot, no binder, no medicine, no injunction in regard to diet, and no restriction as to the movements and posture of the patient. But when the surroundings are dirty, and there has been probable introduction of infectious material into the vagina; or where there has been a precipitate, or otherwise accomplished, labor before the

arrival of the physician; or when the maternal passage has suffered any solution of continuity, especially if in the vagina or the cervix; or when instruments or the hand have been carried into the uterus, as in turning or adherent placenta; or when there is retention of secundines, such, for instance, as a portion of membrane; in short, whenever the maternal surface has been injured, when parts are left behind that do not belong there, or when there has been serious danger of carrying infection into the uterus; a hot antiseptic liquid should be passed freely into the uterine cavity, and the aim should always be to precede this with the removal of all extraneous material. The douche should be hot for its stimulating effect upon the tissues with which it comes in contact, and this for many self-evident reasons. Thereafter, the napkins worn over the vulva should be antiseptic rather than merely sterile, for a sterile napkin, though it is free from infectious material, is powerless to check the inward passage of pathogenic germs, which an antiseptic pad would do. The application of the napkin should be preceded by the washing of the vulva with an antiseptic solution, and this is best done by dropping it over the parts from a sponge or receptacle.

If the patient is too weak to sit up on a chamber to urinate or defecate, an antiseptic solution may be passed into the vagina twice daily to prevent decomposition of the pool of blood and mucus that forms in the vagina about the cervix—the most dependent part. But the amount used need not be more than a cupful—just enough to fill the vagina to overflowing, and not enough to distend it, unless sepsis already exists, when the douching should be more thorough.

These views, while not agreeable to the rabid antisepticist nor to the zealous fellow at the opposite extreme, nor of interest to the indifferent practitioner, will commend themselves to practitioners of common sense and a judicial frame of mind. Upon the others it is generally useless to attempt to make any impression.

AFTER-PAINS.

The prevention and relief of after-pains is summed up in the phrase "avoidance," or "removal of cause," and the use of anodynes. After placental expulsion, the uterus should be thoroughly emptied, especially in women subject to after-pains. When they do exist, they are best and quickest relieved with warm douches. If necessary, opium may be given, preferably in the form of the camphorated tincture because of its diffusibility. The amount should be large enough to be effective. If the uterus contains any clots, they should be removed.

While too much interference is apt to set up more trouble than it removes, it must not be forgotten that a let-alone policy allows many a patient to become irretrievably bad.

DISINFECTION OF URETHRAL INSTRUMENTS.

Anyone who has had occasion to treat a cystitis that becomes chronic or leaves an irritable bladder would gladly utilize any means of avoiding a similar experience, even if very troublesome; for the annoying frequent hasty micturition, together with the hypochondriasis peculiar to cystic trouble, form a combination that eventually is apt to cause the attending physician the loss of either his patient or his equipose. Treatment is of uncertain efficiency, while the annoying symptoms of the affection are aggravatingly persistent. Physician and patient are prone to become mutually disgusted with one another. And yet most of these conditions may be avoided by a little prudence. I believe that a cystic inflammation has no more tendency to spread beyond its exciting cause than has a similar condition elsewhere. Bruising of the vesical neck during labor will most assuredly cause tenderness at the site of injury for several days, but this will not spread or be prolonged without cause. Now, one of the commonest factors of extension of vesical inflammation, if not almost the only one, is some form of local infection, and there is no more efficient vehicle for the carrying of poison to the bruised and partly-paralyzed vesical wall and its lining mucosa than the necessary catheter. That it may also extend inward from the vulva is possible, though not probable; but this contingency is readily enough guarded against by antiseptic local ablutions several times daily, while the catheter should always be sterilized before its introduction.

The soft-rubber catheter is the best for general use, as it is readily kept aseptic, and is too pliable, to do mischief, especially in unskilled hands. It is easily kept in condition ready for use by exposure to formalin vapor. But it is useless to have a surgically clean catheter, and then pass it over an infectious vulva or through unclean hands. The handling must be preceded by cleansing of the physician's hands, and its use by washing of the vulva, and especially the vestibule. These admittedly troublesome precautions will prevent many a cystitis, and should always be carefully practiced in cases having a history of previous vesical trouble.

The advantage of the sterilized metallic catheter in competent hands is, that its outer end may be safely handled by unclean hands, thus permitting its prompt introduction without

danger of infection. The soft-rubber catheter, on the other hand, must be handled at points that are obliged to enter the urethra, thus absolutely necessitating aseptic hands.

MENSTRUATION AND OBSTETRIC PADS OR NAPKINS.

It is the little things in life that cause the most trouble, and I do not say this facetiously as a play upon the now generally-accepted germ-theory of disease, though what I shall say actually has a direct bearing upon the subject of infection. Men are best judged by the small things they do or fail to do, and it is the relatively insignificant things in life that irritate us the most. The big things we are prepared for and guard against, or they so overwhelm us that resistance is useless, and we bear them philosophically.

The kind of clothes worn during menstruation and after delivery is often the true key to a puzzling case of infection. With many women, any old rag is good enough to catch the flow, and most untrained nurses regard the use of antiseptic pads as overpunctilious, some even disregarding the positive instructions of the attendant to apply them. Who has not seen the menstrual napkin a piece of dirty old muslin or other cotton goods, and sometimes a rag of flannel? These are sometimes worn all day long, a single one, the woman meanwhile being at active work in mill, factory, or shop. An employer's regulations are often so stringent that the time cannot be obtained to make the needed change. This I have repeatedly known to be the case. Then there are women who, while willing enough to wear an antiseptic pad, find them too expensive.

Much of this dereliction is due to the failure of the physician to impress upon the patient the necessity for cleanliness and antiseptics, and the ease and cheapness with which suitable pads may be prepared by any woman unable to buy those that are ready-made. Suitable ones may be prepared as follows.

The cheapest kind of cheese cloth, costing three or four cents per yard, is cut into strips one foot wide, and long enough to pass over the vulva from attachments front and back to a belly-band or belt. One pound of absorbent cotton can be obtained for twenty-five cents, and a small bundle of common cotton for about three cents. A piece of each kind of cotton, about $3\frac{1}{2}$ by $6\frac{1}{2}$ inches long, is laid, super-imposed, upon the middle of a piece of cheese cloth cut as indicated. The margin of cheese cloth upon each side is then folded over them, when the pad is done. A number of these pads, say six or twelve, are folded and laid in a solution of carbolic acid, creolin, bichloride or other antiseptic, and permitted to remain

there for several days. A day before the expected menstrual period, a sufficient number are taken out and dried under cover. They are then ready for use, and do not cost above one cent each. It is simply necessary that the absorbent cotton should be placed next to the vulva. More details need not be gone into here, but will occur to any physician who desires to put these suggestions into use in his practice.

Careful attention to cleanliness at these periods will prevent many a puerperal fever and a great deal of post-menstrual leucorrhea.

WHEN TO LEAVE A PATIENT.

The rule is often seen in print, and occasionally it is heard in conversation or at a medical society meeting, never to leave a woman just over a labor so long as her pulse is at or above 100. This is a very poor rule, unless liberally qualified. It is safe to leave a patient in the city, especially if near one's office, that it would be wrong to leave in the country two or three miles from the office. It is always safe to leave a patient when one is satisfied of being able to get back in time to avoid a serious mishap. Many a patient has a pulse well below 100 and yet cannot be left in safety, while there are others with a pulse above 100 that may be bidden a cheerful and light-hearted good-bye. It is needless to give instances, for almost any practitioner can recall them from his own experience. The man who is obliged to practice by set rules of this kind would better get into some other business, for his patients and their diseases do not follow set rules. Each man must judge for himself in every instance whether he is doing his duty by the patient in leaving her. If he is in doubt, he had better remain. If he feels safe in going, and yet knows that certain contingencies may arise that would require his presence, he can tell some one in charge what to look for, and to notify him at once should it be necessary.

WHEN TO MOVE THE BOWELS.

There is no reason why a woman who has just been delivered of a child should retain her feces for a number of days, so that when she has a stool it becomes a miniature childbirth. Usually, there is a stool shortly before or during labor. I want my cases to have the next stool within twenty-four or thirty-six hours, and I do not hesitate to give them something to this end. Usually, this is compound licorice powder, and either a rectal enema or a glycerine suppository.

PILES DUE TO PARTURITION.

During the passage of the fetus through the pelvis of the mother, and over her pelvic floor, it often compresses the hemorrhoidal veins, and crowds all the blood within them into the veins about the anus, preventing the return of additional supplies from the capillaries. The result is hemorrhoidal varicocities—piles. These are often neglected at the time as of minor consequence, entailing several days' unnecessary suffering upon the patient; unnecessary because it could be obviated most of the time by replacement of the extruded masses. In many cases this occurrence can be prevented by support between pains, thus encouraging the back-flow of the venous blood as fast as it comes from the capillaries. After these masses have existed for a day, they often become rather intractable. It is well enough to leave a good deal to Nature, but this should never be done when a few moments' assistance can do so much good without harm.

Many a backache is due to piles that have been overlooked or neglected. Some "after-pains" I have found to be reflexly excited by piles, and they subsided at once upon the replacement of the extrusion. It must also be remembered that while a sudden distension of the tissues of this kind may speedily and completely be recovered from if not too long continued, prolonged maintenance in an abnormal condition makes the return to the normal more difficult, and tends to recurrence.

It becomes the duty of the obstetrician, therefore, to prevent the occurrence of piles during labor, if it is possible, and he should reduce them as promptly as he can, the exception being when they are of the external marginal variety, which are, necessarily, made worse by attempts to pass them through the sphincter, for they belong outside.

WHAT TO EAT.

In harmony with my practice of viewing labor as a normal process, I consistently let my patients eat whatever they please, and as much of it as they like. This I have always done during the past twenty years, and I have never had occasion to regret it, though patients who permitted themselves to be half-starved were undoubtedly the worse for their foolishness at the getting-up time. Why a woman in good health, after a tiresome labor, and under the added strain of nursing an infant, should be deprived of an abundance of nourishing food transcends ordinary comprehension. This practice is presumably also due to an old custom born of the speculative ignorance of some old-time authority.

Then there is the equally stupid habit, with many, of drinking beer or porter or ale to make milk. Then there are some wiseacres who are sure that nothing makes milk so fast as milk. Sometimes I remind them that grass and clover make good milk, too. That satisfies the meddlesome that there is something about milk-making by mothers that they do not know. It has always seemed to me that well-relished nourishing food of the best kind suited to the individual, is the best thing to help her to make milk.

My experience in full-feeding of confinement cases is that they improve daily, and get up quite well and strong within the usual two weeks. I have them stay in bed, more or less, if they do not object. The added strength it undoubtedly gives them not only adds so much to the nourishment of the child, but it also increases the resisting-power against disease.

WHEN TO SIT UP.

My patients are permitted to follow their inclinations from the beginning so long as they have not had labors that leave them in a pathologic state. Many a woman is abundantly able to get around on the bed, moving herself readily to facilitate cleaning up. If she could do this during labor, and is able to do so immediately after, I never could see any valid objection to her continuing to move about and make herself comfortable any time afterwards whenever she had the inclination. I let them sit up in bed to eat their first meal after the labor. They relieve themselves upon the chamber or commode, as they prefer, and this permission is a boon to most women because so many of them cannot use the bedpan. Bladder and bowels move more easily in the customary manner. Nor have I any set day for letting a patient get up. While some women are best off at the end of a week lounging about in a light wrapper, others may require rest in bed for a couple of weeks, and might be still better off a week longer in bed. Most women who engage a nurse for two weeks do not want to get up at the end of eight or nine days to be smart so much as to be comfortable, to feel better, and I have yet to find the woman who has thus injured herself, provided she was neither exposed nor set to laborious work.

DORSAL DECUBITUS IN CHILDBED.

Who does not recall, at will, the old superstition of the importance of the ninth day after confinement, in fact of the ubiquitous ninth day in most acute disorders? This old saw is so often and repeatedly ding-donged into the ears of the busy

physician that every now and then one meets one who has gradually yielded to this persistent influence in the form of unconscious hypnotic submission. It is really an instance of mental suggestion.

A similar superstition prevails, and in greater degree, as to the necessity of a woman in childbed remaining flat upon her back for a varying number of days after the birth of her baby. Why it should ever have been considered necessary to impose such refined torture upon a woman who has just escaped the rack of labor almost transcends comprehension, especially in view of the innumerable instances constantly occurring of women ignoring the rule and doing excellently.

The same individual who will keep a parturition case flat upon her back for days, will carefully move a patient with a fractured leg several times a day to avoid a bedsore. The reason is lack of original thought in the profession. While at college, the student is seldom encouraged to use his reason, only his memory being utilized. But it is reason and judgment that are so essential at the bedside.

Consider the firm little normal uterus of three ounces weight, and compare it with the large, soft, vascular mass of twenty-four ounces that it is immediately after labor. Is it not evident that maintenance of this organ in one position for a number of days will interfere with its proper circulation and involution at its dependent parts, those subjected to continuous pressure? Those who cannot appreciate this statement should see a uterus within a week or ten days after confinement that is removed post-mortem, or one exposed in the living woman in abdominal section. It shows the impress of adjacent parts if it has remained long in contact with them.

Those who advise long-continued dorsal decubitus do not realize that a weight of twenty-four ounces constantly resting upon the rectum is, in itself, sufficient cause for persistent constipation. Thus, while they impede the passage of the feces, and cause stagnation of blood in the hemorrhoidal veins, upon the one hand, they excite and irritate the pelvic organs with laxative medicines to force an unnecessarily obstructed passage. This is anything but rational medicine. I have been more or less guilty myself of this fault in my earlier practice, so that I, too, come in for my share of blame.

If you want comfortable patients, women who will thank you from the bottom of their hearts for the amelioration of a trying position, tell them that they can lie in any position they choose, and change it as often as they like. Pain is Nature's warning. Tell your patient to make herself as comfortable as

she can. A position that causes pain should be altered. We should realize that frequent changes from side to side, or to the back, gives every part of the uterus its share of bearing the weight of the organ, and that by this means, also, pressure of the uterus does not rest continuously upon any one pelvic organ, but is shifted from one to the other, never remaining long enough upon one to cause injury or reflex disturbance.

Maintenance of the persistent decubitus position frequently causes enough suffering to prevent sleep. The resulting effect upon the mother undoubtedly modifies the quality of the milk, and hence the nourishment of the child. We must learn to do some thinking on our own account for the sake of our patients. It is a mistake to adhere blindly to musty precedents because they have been practiced for a long time. Rather let them be questioned and be put to the test of reason. The art and science of medicine is advancing with the rest of the world, and we should ever realize that fact. Some of the practice to-day is as antiquated and as irrational as are the concoctions of dried and pulverized insects used for diseases during the preceding century, at which time some of the present senseless usages were also in vogue.

DRAINAGE AFTER CHILDBIRTH.

The North Carolina Medical Journal of February 20, 1898, is graced with a most valuable and suggestive paper by Dr. Livius Lankford, of Norfolk, Va., entitled "Drainage After Normal Labor." He recites his earlier obstetric experience, many years ago, in a rural section of the South, in which he commonly saw women get up on the third day after confinement, and do better than those who remained in bed a longer time. He found all his early risers blessed with rapid and complete involution of the uterus. When he came to Norfolk to practice, he found most women very willing to remain abed ten days or longer, and he then also observed a larger proportion of cases of subinvolution than he had noticed before.

Eventually he came to the conclusion that early sitting up insured good drainage, got rid of retained lochia, which forms an excellent culture medium for pathogenic germs, and thus were patients saved considerable disturbance by early getting up. His experience covers twenty-five cases in Norfolk of the kind of women who felt that they ought to stay in bed ten or more days. Beginning on the third day, he had them sit up a half-hour out of every two and a half during this day, and one out of every three for two more days, then two out of every four until the tenth day after labor. Sitting up invari-

ably caused a discharge of all the lochia retained in the vagina.

Some time before the appearance of this paper, I had occasion to say something in a similar strain, advising that patients be permitted to sit up in bed to eat, and in an easy chair daily while the bed was being aired and made over, and this has been my practice for several years among patients willing to try it. Dr. Lankford's experience is demonstrative, and is additional evidence of the adherence to superstitious fancies the profession has been guilty of in keeping obstetric patients in the dorsal decubitus for more than a week, thus not only causing them much suffering, but subjecting them to the added dangers of infection through stale lochia retained in the *fornix vaginæ*. Besides this, there is the fact that the patulous os lies continually bathed in this stale mess, affording a ready passage to the endometrium. Then there is the stagnation of the local blood-current because of constant pressure exercised by the heavy uterus, and its undoubted tendency to backward displacement. The almost inevitable effect of this stagnation of circulation is subinvolution, with all its attendant ills.

The lesson, then, is, after forty-eight hours at least, to occasionally get the patient in an upright position so that the lochia may readily and completely drain away.

Chapter X.

COMPLICATIONS.

SEPTIC FEVER.

If the patient develops any fever after delivery, a septic condition within the uterus or vagina may be suspected. The lochial flow is then usually fetid, though not always so during the first day, at least not appreciably so. It must not be forgotten that when a woman lies upon her back, the lowermost part of the vagina is its upper end behind the cervix. It is here, and around the cervix, that the flow collects, forming a pond that overflows at the *entritus vulvæ* over the perineal edge. It is this stagnant pool of blood and detritus that is often the starting-point of septic trouble or fever. When this is the case, an antiseptic vaginal douche will clean matters up, and may be repeated several times at three or four hour intervals. When, however, the uterus is the focus of trouble, the nozzle of the syringe should be passed up to the fundus, and at least two quarts of warm antiseptic solution injected in a pretty good stream. These douches are always gratifying to the patient under the circumstances. I do not believe it is good practice to dilate, curette, and then pack with antiseptic gauze all these cases, though it is advised by some of our best men. But it is usually the "best men" that start fads that kill thousands of patients before it is realized that that practice has been extreme. Specialists have their place, and do a great deal of good, but nearly all of them have their fads and ride their hobbies, and it is the thoughtless blind follower who carries them out and does the most damage. I have had comparatively few cases of septic infection after confinement, and I have seldom curetted them, and have lost none—in fact, the fever has not continued longer than from one to twenty-four hours after treatment was begun.

Here is an illustrative case: Mrs. A. M. E. gave birth to her fifth child on the evening of February 23, 1895. On the 27th, her husband called on me at 11 P. M., saying that she had had a chill between 8.30 and 9 P. M., but that her flow did not smell bad, and that she had been exposed to a draft between the

door and the window, which they and the nurse believed to be the cause of the chill, and that she was now sweating and was constipated. I ordered acetanilid, cascara sagrada and a soap-suds enema. At 11 A. M. the following day, I found her with a hot moist skin, pale face, anxious look, moderate hypogastric pain, a fetid vaginal discharge, no stool, headache, and a very soft rapid pulse; temperature, 106° F. I at once prepared and injected three quarts of a hot antiseptic solution, made up of bichloride of mercury and salicylic acid, into the uterus and well up against the fundus and sides, the last quart of the douche being made in the vagina about the cervix uteri. She changed during the douching, and at its completion she no longer perspired, her skin felt nearly natural, there was some color in her face, and her headache had ceased. She said that the injection felt very grateful. I immediately gave a warm rectal enema of soapsuds, which was almost at once followed by wind and feces. Not more than twenty minutes had elapsed from the beginning of the intra-uterine douche to the end of the stool, when I again took her temperature and found it a shade below 101° F. She soon had no more fever or other trouble, but I continued the injections twice daily for several days.

The moment I see fever, I suspect a septic origin, and, if verified by vaginal examination, use the antiseptic douche, usually intra-uterine from the beginning, and with a stream of good force. If the patient is weak, I depend upon quinine in 10-grain doses every five hours until she is better, unless cinchonized. Other treatment is according to indications.

AGAINST ANESTHESIA IN CURETTEMENT AFTER LABOR.

The usual proper practice in infection after childbirth is curretting and douching, or irrigation of the uterus. Sometimes this is done under anesthesia and sometimes not. As to which is the better plan would seem, *a priori*, to make little or no difference aside from the question of pain to the patient and the unhamperedness of the operator under anesthesia. But recent investigations within the last two years by Dr. E. P. Hershey, of Denver, Col., sheds a more definite light upon the subject. In a paper in the *Colorado Medical Journal*, I believe in the year 1899, he gives, substantially, the following information:

"Curettement after labor is required in cases of infection. In a study of 30 cases, of which 19 were curetted with anesthesia and 11 without, of the 19 with anesthesia, 18 were operated upon at different times, varying from the first to the ninth day, and of these 7 died. Of the 11 without anesthesia, 9 were

operated upon from the first to the sixth day, and none died. One with anesthesia upon the fourteenth day, and 2 without anesthesia on the tenth and fourteenth days, died.

CURETTEMENT WITH ANESTHESIA.

Day.	No. of Cases.	Recovery.	Death.
1st	2	2	0
2d	4	3	1
3d	3	2	1
4th	4	2	2
5th	3	1	2
7th	1	0	1
9th	1	1	0
14th	1	0	1
	—	—	—
Total.	19	11	8

* CURETTEMENT WITHOUT ANESTHESIA.

Day.	No. of Cases.	Recovery.	Death.
1st	1	1	0
2d	2	2	0
3d	2	2	0
4th	1	1	0
5th	2	2	0
6th	1	1	0
10th	1	0	1
14th	1	0	1
	—	—	—
Total	11	9	2

“This experience is emphatically against the use of anesthesia in curettement after labor. The reason why anesthesia is objectionable is that it lowers the vitality or resisting power of every organ in the body, thus affording toxic elements a greater opportunity for destructive work, and enabling them, in some instances, to get so far advanced that the patient cannot resist, thus entailing death. If the patient is thoroughly curetted without anesthesia and antiseptically, her resisting powers are unimpaired [in fact may be stimulated], and if this is followed with quinine, strychnia and whiskey, the enemy has been routed and success is assured.

“Curettement is very easy when the os is dilated, as it is for some time after labor. The lack of nerve usually lies in the doctor, not in the patient. [Truer words were never uttered.] Whether there is much pain or not in this procedure

depends entirely upon the operator. A gentle, though firm, stroke of the dull curette is painless and effective."

Many favor the sharp curette as really being the safest, especially in skilled hands, wherever the dull curette is dangerous, in that it does not always bring away all objectionable material, though it leaves the operator in fancied security, only to be discovered when too late. I prefer the sharp instrument under almost all circumstances, but admit that it must be used with greater care and judgment than the dull one. It is still better to use the rinsing curette with a good stimulating antiseptic, say carbolic acid and formalin.

CONVULSIONS.

Convulsions, attributable to pregnancy, may occur at any time during gestation and the childbed period. They are epileptic in character, excepting the initial cry. They occur oftenest in primiparæ, and usually in multiparæ with coincident renal disease. That they are largely reflex is indicated by their predominance in primiparæ, and when pregnancy is necessarily a greater disturbing element, all other things being equal, than are succeeding gestations. Yet, any disturbance so great as to cause veritable epileptic seizures, sometimes causing the death of the fetus, is serious enough to claim our most earnest attention. While often preceded by prodromata, such as headache, nausea, and ocular disturbances, there may be none at all, the attack coming on without a moment's warning. It is, therefore, safe to say that the presence of convulsions in a pregnant woman is a herald of great danger, and necessitates a "call to quarters," to use a now well-understood phrase, by the attending physician. He must be on the alert for bad signs. The urine must be carefully and repeatedly examined, and the elimination made thoroughly efficient. Persistence of convulsive seizures, despite treatment and prophylaxis, demands the expulsion of the uterine contents.

The cause of convulsions during the gestation and childbed period is wholly unknown despite the many varied and highly fanciful theories advanced to account for them. We do know that there is almost always coincident renal disease, which some have concluded to be the cause of the convulsions. But, inasmuch as the same condition of the kidneys is found during this period, as well as at other times, without a sign of convulsions, there must be some other explanation. The truth, probably, is that when we understand the cause of epilepsy we shall have a fair idea of that of so-called puerperal convulsions, for I believe that they are identic, and that the pregnant con-

dition, in some unknown manner, predisposes to epilepsy. The prevalence of renal disease is not so extraordinary when one takes into account the circulatory changes incident to pregnancy.

While hardly expecting to take up the subject of diagnosis of this condition, it seems to me well to call attention to a few points in differential diagnosis. Epileptic seizures begin with a cry, and have existed before impregnation. Hysteric attacks are recognized by their capriciousness, affectation, and exaggeration, or these variously combined. Convulsions of cerebral origin, as from hemorrhage, embolism, or thrombosis, are followed by motor or sensory symptoms, or both. Uremic convulsions may not, at first, be recognized; in fact, sometimes, cannot be for some time—if at all. The most dangerous cases are those beginning with sudden coma, especially if there are no premonitory symptoms, and the urine is full of albumin and tube-casts, such patients often never regaining consciousness. Marked edema is said to indicate less danger, the convulsive seizures being mild or absent in proportion to the extent and severity of the dropsy. Upon this point I am not sure, but I do know of one case that now occurs to me, and which I have elsewhere mentioned in this series of papers, of a woman swelled up to and including the vulva and groins, whose labia majora were so tense and large as to feel like the tightly inflated rubber labia of an obstetric manikin. She had repeated and severe seizures. But she eventually gave birth to her child, and made a complete recovery. I saw her, temporarily, for another physician, and controlled her attacks with 10-minim doses of tincture of *veratrum viride* at once, and 4 minims additional every hour, or as needed. She was unconscious, and the drug was given, in tablet form, under the tongue, as I did not have my hypodermic syringe with me.

One-fourth of these cases are said to die, and there is no special tendency to recurrence in subsequent pregnancies—a gratifying fact to communicate to patient and friends, and, therefore, one that should not be forgotten. The earliest cases are the most dangerous, probably because too much time is lost in vain attempts to save a doomed fetus. The condition rapidly disappears after expulsion of the uterine contents.

Treatment consists in stopping the fit, and controlling succeeding ones, attention to the renal function and elimination generally, and forced expulsion of the uterine contents. If the treatment is inefficient, chloroform inhalations bring the convulsion to an end at once. This relieves friends and bystanders, and consequently gives the physician prestige and

control over the patient and her advisers, and enables him to formulate a plan of treatment at reasonable leisure. The effect of the chloroform may be continued with hypodermic injections of morphine (gr. $\frac{1}{2}$) and atropine (gr. 1-50), unless there be chronic renal disease. These remedies are to check the attack, but do not cure.

MILDER PUERPERAL CONVULSIONS.

Those who believe the fits to be due to a special poison in the blood, logically favor blood-letting. But the presence of a blood-poison is hardly proven, and I believe the effect of venesection will ultimately be found to be due to the lessened blood-pressure rather than to the elimination of any special poison. This opinion I base upon the well-established and efficient action of *veratrum viride*. When it gets the circulation in a condition similar to what it is after bleeding, it is effective, and yet none of this essential nutritive fluid has been sacrificed. Chloral hydrate and potassium bromide, separate or combined, in scruple or half-dram doses, have proven efficient, and they act both by lessening blood-pressure and obtunding the sensibility (excitability) of the cerebral cells. The best treatment, in my judgment, consists in the immediate injection, hypodermically, of 10 drops of the fluid extract of *veratrum viride*, and a repetition of the dose within fifteen minutes if the first is not effective. Once the seizure is quieted, the *veratrum* may be given by the mouth at regular intervals. The pulse should be kept at or near sixty.

TOBACCO IN CONVULSIONS.

Right here I want to make a suggestion, and I trust and hope that it will do good. There seems more use for it in country than in city practice. If the theory of the action of *veratrum* being due to lessening blood-pressure is correct, then any marked arterial depressant would also be effective. While *veratrum viride* is only at hand when in the possession of the physician, tobacco is to be found in ninety-nine households out of every hundred. The next door neighbor is sure to have it if it is not in the patient's house. It may be applied to the belly as a poultice, or it may be made into an infusion, and placed in the rectum. A bolus can be put in the mouth of the unconscious woman. It is prompt in action, extremely depressing, and yet practically without danger.

Elimination may be hastened by the use of pilocarpine (gr. $\frac{1}{6}$) hypodermically, or of elaterium or croton oil, or

these combined. The hot-air or vapor bath has its use, but is depressing, and must be used accordingly.

The question of when to empty the uterus may very properly be answered by the phrase, "not too late," thus indicating what is too often the danger of the patient (delay), and what should be the guiding thought of the physician (to let the patient take no chances). When, despite the use of eliminants and depressants, whichever ones may be employed, fits recur, it is folly to wait. The os should be dilated, and labor instituted. It is folly to wait, in the present state of our knowledge, when we know that early seizures are the most fatal because of temporizing in the usually vain attempt to prolong gestation long enough to enable a viable child to be born; this, in the face of a high mortality, when more women are sacrificed than children are saved. The severer the attacks, the prompter must be the emptying of the uterus. This procedure almost always ends the trouble, and enables the woman to enter upon another pregnancy with very little likelihood of further convulsive attacks.

PROLAPSE OF THE CORD.

Prolapse of the cord is met with occasionally by every practitioner doing a reasonable amount of obstetric work. The indications for treatment are simple enough, and yet often difficult to meet satisfactorily. Difficult, at times, because the wherewithal to work with is not at hand and readily obtainable, or often difficult or impossible, despite all that can be done with every appliance at hand. The danger is to the child from compression of the cord, and consequently arrest of circulation. So long as there is plenty of room between the child's head and the maternal parts, as shown by continued pulsation of the cord, there is no immediate danger. But if the presenting part is tightly wedged in the parturient canal, the child is likely to die unless, in some way, relieved. It is usually easy enough to get the cord back, but it persists in coming down again. The knee-chest position has been widely recommended to aid in the reduction of a prolapsed cord, and to guard against its redescend. This practice assumes that the prolapse is really a falling, gravitation, of the cord, and does not seem to take into consideration that the cord is really expelled from the uterus. If it can be placed high enough toward the fundus to be beyond the expulsive influence of the uterus, it would seldom require much further attention. Many a time has the cord been pushed up to the fundus only to promptly redescend, thus, at first blush, seeming to negate this

contention, but it does not, for in those instances, while the most dependent portion of the funis loop has been carried to the fundus, the two resulting subloops still remain low enough down to come within the expulsive influence, and this is effectively shown in the double loops following replacement of a single loop. The practice, then, should be to carry the prolapsed cord to the fundus, so that the entire funis is beyond the expulsive grasp of the uterus. That gravity, and hence the knee-chest position, aids this there cannot be any doubt, on which account this should form part of every treatment for the replacement, and retention in proper position, of a prolapsed cord.

As to the best means of effecting reduction, I believe there is no better than the old method with a string, stilet, and catheter. A loop of string is passed through the catheter and out at its eye, up to which point the stilet is also introduced. The loop is carried around the cord and then over the end of the stilet, which is then pushed forward beyond the eye of the catheter, thus locking the end of the loop that encircles the cord. By drawing on the double string hanging from the end of the catheter, the loop about the cord may be drawn as tight as desired. The stilet so stiffens the catheter that it and its captive funis are readily carried up into the uterus, or down with the patient in a knee-chest position. Slight withdrawal of the stilet releases the string loop and leaves free the funis, when the catheter, stilet, and string are withdrawn. Should the cord redescend, it is to be held into position after replacement by retaining the catheter. Should other loops thereafter appear, they are to be similarly treated and held in place. A still simpler method of forming a string loop, is to encircle the stilet, through the eye of the catheter, with a looped string, which is then carried back around the cord, and its looped end passed over the stilet, which is then pushed home, past the eye, into the end of the catheter. This avoids the necessity of passing the string through the catheter.

When, despite all efforts, the cord comes down, and remains so and stops pulsating, labor should be hastened with a view to saving the life of the child. But I consider it bad practice to endanger the mother in any way in attempts at saving the child in these cases. A childless mother, be it remembered, is preferable to a motherless child.

EXTRA-UTERINE (ECTOPIC) GESTATION.

In no other part of the obstetric field is the advance in practice more exemplified than in the matter of extra-uterine

pregnancy. Less than twenty years ago, the woman who was so unfortunate as to have a fructified ovum outside her uterine cavity was almost necessarily fatally doomed. Those who survived were indebted to Nature's unaided efforts, probably helped by a happy combination of circumstances tending to a favorable ending of the condition. Some women reached full term, had a false labor, and thereafter went through life with a protuberant abdomen, thus becoming the ripe object of solicitation by every gynecologist she chanced to meet for the opportunity to do a striking laparotomy. I met one woman who then had been so situated for fifteen years, and she was still living in the same condition six years afterwards.

The unfortunate who had a tubal, or other extra-uterine, pregnancy having a thin rupturable sac, went quietly on her way to final rupture and eventual death. During life, her premonitory symptoms were mistaken for cramps, and after rupture she was treated for "peri-typhlitis." I have seen just these things, and I know what I am writing about, because they occurred in the private practices of leading physicians of Brooklyn, and in hospitals of the same city; it being my privilege to make the post-mortem examinations in these cases.

I can recall some pitiful instances that caused inconsolable grief to gnaw at the hearts, not only of living relatives, but of conscientious and able attending physicians. Not to diagnose a case of tubal pregnancy before rupture at that time was hardly considered a sin, though it was beginning to be learned, with a fair degree of certainty, when a rupture occurred. But we had not then yet gotten away from the long dread of opening the belly. Nearly all men recoiled from this then death-dealing procedure. The man who had done a few successful ovariectomies or other belly operations was considerable of a hero. To be called in to make a post-mortem examination of a beautiful young woman, snatched away from a loving husband, relatives, and friends, and a comfortable home, after one or two days' ineffectual treatment for "cramps, perhaps peritonitis, and possibly internal hemorrhage," and find a ruptured tubal sac, was a sad experience. The solemn faces of the attending and consulting physicians present bore mute testimony to their helplessness. Every symptom was carefully gone over, compared with other similar cases, and the possibility of a correct diagnosis and the chances of laparotomy, with ligaturing of the vessels and cleansing of the belly, carefully considered. Experiences such as these, entailing a long premature death-roll, have helped to give us our knowledge of to-day in the diagnosis and treatment of extra-uterine gestation.

It is becoming quite well established that all, or almost all, extra-uterine pregnancies are tubal; that some cases go to full term, and either die after a spurious labor, a rare occurrence now, or are cut out of the mother's belly, and thus saved; and that infants developed extra-uterine usually either die early, or remain in feeble health.

Impregnation may occur anywhere between the uterine and peritoneal openings of the Fallopian tube, it really being within the uterine wall if near the uterine orifice of the tube, and hence called interstitial. Rupture may take place through the peritoneal covering of the sac, or it may tear away from the peritoneum into the pelvic connective tissue between the peritoneal layers of the broad ligaments. In either instance, the extruded blood may become walled in, thus forming a new sac within which gestation may continue to full term. This latter sac is called secondary. Thus secondary sacs may be peritoneal or sub- or extra-peritoneal, while primary sacs may be interstitial if at the uterine end of the tube, ampullar if in the middle portion (ampulla) of the tube, or infundibular if at the free end (infundibulum) of the tube. It is not necessary to recollect these various namings, but it is to hold fast to the diagnostic signs and symptoms, and their treatment.

There are many contradictory opinions as to the cause of tubal pregnancy, none of them proven. They are of no clinical value at the present time, and need not, therefore, concern us at present.

The recognition of extra-uterine pregnancy is not easy, and it is, at most, often presumptive. The first sign is cessation of the menses. This is followed by some increase in the size of the uterus, with a mobile tumefaction at its side unless the growth is interstitial, when it bulges from the side of the uterus like a fibroid, but lacking its firmness. Sometimes a bloody flow from the uterus reappears. Pains may follow at the site of the sac. All this may be mistaken for an exudate due to cellulitis, though the latter has a less mobile and more boggy feel, and is tender. If rupture occurs, there is a sudden sharp pain that may be severe enough to fell the patient to the floor—she may faint. There is shock, and the bleeding may be so free as to cause symptoms of dangerous hemorrhage. Examination reveals a pelvic hematoma, or, at least, a bulging in the cul-de-sac of Douglass, if the rupture be through peritoneum, or a soft boggy bulging down of the pelvic roof on one side of the uterus. Should the patient have been examined before, the local changes will at once be apparent. Amenorrhea, then, when subsequently followed by bloody flow

or not, together with uterine enlargement, and a coincident growing mobile tumor at one side of the uterus, are strong presumptive evidence of tubal pregnancy. If this is followed by sudden sharp pain and shock, and there is increased soft tumefaction within the pelvis, or there is an hemocele, ruptured tubal pregnancy is almost certain.

The treatment of this condition resolves itself into what to do before and after rupture. If diagnosed before rupture, the first effort should be to destroy the embryo, and no plan is better and safer for this purpose than electrolysis or faradism. A strong faradic current may be used early, say within the first two months, shocking the embryo to death, after which the sac and its contents atrophy and become absorbed. Later than this, it is better to use the galvanic current as strong as can be borne. Some have plunged a needle into the sac, and connected it with the kathode pole of the battery, the other being attached to a belly-pad. This destroys by direct electrolysis. There is no danger from sepsis, because the electrolytic process is aseptic. Of course, the greatest care should, nevertheless, be used in the previous disinfection of the vagina and needle. These methods proving ineffective or not being available, the sac should be removed with the knife. This may be done through an opening in the middle of the belly-wall between the symphysis pubes and umbilicus, or from underneath *per vaginam*. The latter method presents no greater difficulties, and is accompanied by less shock than is the abdominal operation, on which account, therefore, it is the preferable procedure.

Should rupture have occurred, the belly must be opened, the sac and its contents removed, together with all effused blood, and the bleeding vessels ligated *en masse*. But strenuous efforts should not be made to get out all the effused blood, for this is not septic, and will be readily enough absorbed, and cause no trouble if the introduction of infectious material has been successfully guarded against. If the shock is great immediately after rupture, it is best to defer operative relief until this has vanished, except, however, when the signs of severe hemorrhage are so marked as to justify the fear of a fatal outcome from this cause, when nothing should be permitted to delay operation. It may be expedient, especially if waiting for an operation, to compress the abdominal aorta with the ulnar edge of the hand or the closed fist.

In handling these cases, it must not be forgotten that some ruptures cause little trouble, the effusion becoming encapsulated, with gestation going on to full term. If there is little shock, therefore, and slight bleeding, say only evidenced by

intra-pelvic palpation, and then showing very little, it may be best to keep the patient perfectly quiet, and await the outcome. But this is hazardous, the patient being all the time on the verge of a volcano, not only at the time, but throughout the future progress of her gestation.

When pregnancy is so far advanced that the sac is too large to remove, its edges had better be united to those of the belly-wall opening. Some advocate the removal of the placenta at once, while others, with apparent good reason, counsel against this on the ground that dangerous bleeding may follow because of the absence of a surrounding contractile muscular wall as it exists in the uterus. If the placenta comes away of its own accord, well and good; but if not, then leave well enough alone, suture the sac-mouth to the belly-wound, and await Nature's course. Then, again, the placenta may be removed after several days, when its supplying vessels have so atrophied as to practically eliminate the danger of serious bleeding, for this retained and useless mass may become septic. Some leave it in, others take it out, and the practitioner has good warrant for either practice.

These ectopic gestation sacs have the same tendency to adhere to the abdominal walls with which they are in contact as have ovarian and other neoplastic growths. When very large, therefore, they are apt to adhere by their bulging surface to the belly-wall, at which point it is most advisable to make the opening in the hope of not having to enter the peritoneal cavity. A suppurating sac must be treated on general principles, and, whether suppurating or not, it should be periodically flushed with an antiseptic solution, and suitably drained.

The possibility of double tubal pregnancy, or coincident intra-uterine gestation, should not be forgotten, but the mistake should not be made of failure to positively search for a correct diagnosis of suspected ectopic gestation by intra-uterine exploration for fear that a normal pregnancy may be aborted. That latter is not nearly so dangerous as the former, and we are called in to safeguard the mother rather than a problematic future being at the serious risk of her life.

Chapter XI.

OBSTETRIC OPERATIONS.

By obstetric operation I do not only include the work done with the knife, but the other procedures one is occasionally, if not quite often, called upon to do to help along a difficult, or even impossible, labor, such as turning and the use of the forceps. Certainly the most common procedure is the use of the forceps, and this, therefore, naturally comes first.

FORCEPS OPERATIONS.

It is needless for me to reiterate about the forceps what I have already said, but I may say again that an inferior instrument intelligently used is better than the best misemployed. While there is a distinction between long and short forceps, the latter is a luxury rather than a necessity, for the former answers all the purposes of the latter, though not so conveniently. Then there is the improved axis-traction forceps that is supposed to do perfect work, but no forceps can be invented that will make up for the lack of the good judgment of a skilled obstetrician. There are many men, of numerous deliveries, whose work at every confinement at which they use forceps is a crime against the laboring woman. No instrument can help these men. Their deficiency is innate. Some fine work can be done with an antiquated instrument in competent hands. Forceps, like specula and pessaries, have, and still do afford a wide field, for the exercise of the inventive propensities of the mechanic doctor. It is better, in my opinion, for a competent man accustomed to doing good work with an imperfect instrument to continue in its use, than it is for him to run to other implements with which he is not familiar. By this I do not mean to say that he should not improve the tool he has been using if he believes it defective. Whatever alteration will increase its efficiency for *him* is well done, though it might hamper another. So I say, use the instrument that suits *you*, not the one that pleases some one else.

When to use the forceps, is when Nature reveals her inability to do her work as it ought to be done in the interests of the patient, and this, too, is, after all, a matter only to be decided by one's personal judgment. The time for action de-

depends upon so many varying associated factors that set rules cannot be formulated so as not to mean one thing to one man and something else to another.

The thing to bear in mind, in forceps work, is that the axis of the pelvic inlet extends from the umbilicus to the coccyx, or very nearly this, and that of the outlet, at right angles to a line from the coccyx to the top of the pubic arch. But the perineum bulges over the descending head, and must be viewed as a portion of the posterior wall of the parturient canal, so that the axis of the outlet, in practical obstetrics, amounts to that of the distended vulva. The direction in which the head descends is curved, and the extent of this curve is much greater than the proportions of the bony pelvis imply.

THE HIGH OPERATION.

The application of the forceps to the head at the pelvic inlet is termed the high operation. It requires care in the application of the blades so as not to include any of the maternal parts between them and the fetal head. There is danger of including the cervix or the cord, or even of the fetal hand. Such an error is almost always disastrous if not promptly rectified. The proper blade to introduce first is the one that is undermost when locked. That allows it to be dropped after its insertion so that it may be out of the way. Locking should not be done by forcing so much as by coaxing the blades into a position, around the fetal head, that will readily permit locking. The amount of compression to be exercised depends upon the work to be done. When applied for inertia-uteri in a large parturient canal, the grip should be rather light, the compression easy, but when the head must come through a small passage, the compression must be greater in proportion to the narrowness of the canal. Sometimes compression may have to be extreme for the mother's sake, almost all, if not all, hope of saving the child having been abandoned.

Traction should always be made in two directions—downward and backward at first, and later, downward and forward. At first downward and then forward with the hand grasping the handles, and at first backwards and then downwards, by the other grasping the lock. The resultant force is somewhere between these two, and should be in the axis of that plane of the pelvis in which the head then happens to be.

I am well aware of the fact that many able men contend that one cannot tell how much of this force is misapplied. I admit that there is much point to this assertion, but it dwindles under the guidance of the point of least resistance. While this

combined traction is being made, there should also be a rotary and oscillating movement, very gentle, to determine the direction of minimum resistance. Thus we have a guide that is safe, reliable, and easily noticed. I use this method constantly, and like it better the more I try it. The observance of this rule, together with the one restricting the force to not more than about fifteen pounds, makes forceps work reasonably safe in the hands of a novice, provided, however, that the blades have not been misapplied.

Another point of importance is the necessity for the concentration of an unruffled mind upon the intra-pelvic work. The man who gets excited, or feels himself hurried in forceps-work, has no business to undertake it. He should remain as cool as an iceberg, his temper unruffled, and his confidence absolute. The problem is usually a very simple one, and the greatest difficulty in its safe accomplishment consists oftener in the physician's perturbation of mind than in any other cause. A discriminating judgment is seriously marred if the mind is not calm. The operator should be deaf and sightless, if necessary, to all else except the measuring of the effects of the forces he applies within the pelvis. I have seen men tug and pull and fret and fume to such an extent as to remind me of the hysteric efforts of a novice in a sack or potato race.

Furthermore, the instrument should be removed before the head passes the vulva. The additional bulk of the blades may make the difference between a perineal laceration and a delivery devoid of this complication. Nor should the head be unduly hastened through the vulva after being brought down by the forceps, unless the condition of the patient demands a speedy delivery. In breech cases, the aftercoming head should be extracted expeditiously so as to insure the birth of the child alive, even at the expense of a torn perineum, for this can be remedied while a dead child remains dead.

I do not think it justifiable to use the forceps to save the time of the physician. The only consideration should be the welfare of the patient first, and that of her offspring second. Departure from this simple fundamental rule, however trivial, is apt to expand until one wonders at the change.

Finally, I believe it the duty of the practitioner to himself to secure a consultant, whenever possible, in difficult forceps cases, as a protection against villification and blackmail. A disastrous outcome, even though not necessarily a fatal issue, is by some apt to be taken as an excuse for the non-payment of a just obligation, in which attempt they are much less likely to persevere if the intended victim is backed by a professional brother.

VERSION (TURNING).

This procedure, older than forceps delivery, is being largely displaced by the growing use of instruments. Version is often a comparatively unsatisfactory process. Where formerly head cases were converted into footlings, it is now often possible to do the high forceps operation. The advantages of this difference are favorable to the mother in that it shortens her trial while it avoids the risk of a head-last delivery to the child.

Version has for its aim the changing of the presenting part. Either the head or foot is drawn in place to the os, and the operation is called cephalic or podalic, in accordance with the part made to present, either the head or the foot. Until quite recently, cephalic version had been displaced by the easier operation of podalic version, for it is much easier to seize a foot and pull it through the os than it is to get the head over this orifice so that it will remain there and be forced through first. But cephalic version, despite its greater difficulty, is gaining in popularity, because it offers less risk to the child, as do all head-first cases over head-last cases, all other things being equal.

Three methods of version are described. The external, bipolar, and the internal. The first aims to change the position of the child *in utero* before the rupture of the membranes, and and by external manipulation entirely. It is usually attempted in transverse cases. One end of the fetus is pushed up and the other down between uterine contractions, and held there during contractions, until the lower part is within the lower segment of the uterus, when the membranes are upturned so that the uterus may contract upon the child and retain the presentation effected. During the manipulations, the patient lies upon her back, with knees and shoulders raised so as to relax the belly-wall. It is a very simple procedure; nothing could be more so and deserve the proud designation "operation," but the only trouble is that, despite its excessive simplicity, the fetus has a wonderfully persistent objection to being turned that way.

Bipolar version consists in turning, with one hand on the belly-wall and the other in the vagina with a couple of fingers in the os, either before or just after the rupture of the membranes. It is more effective than the preceding process, as can be readily imagined, for the reason that one has better control of the parts, and because the patient is under the influence of an anesthetic. The method is practically the same as the preceding, one part being pushed up and the other down, but with short jerky movements or pushes. If it is a head-first case, the head engages as soon as it gets within the lower zone of

the uterus, if the membranes are already ruptured, or at once upon the draining away of the liquor amnii if the sac has to be punctured. This is a more efficient method than the preceding, and yields better to efforts at changing the presentation.

Internal version is accomplished by the entire hand within the uterus, aided by the other upon the belly-wall. The greater the amount of fluid retained within the sac, the greater the facility with which turning can be done. All intra-uterine maneuvers should be gentle, without irritation of the uterine surface, and should stop during contractions, the fingers and palm being laid flat against the child, so that their backs are compressed by the contracting uterine wall. There should be no unnecessary delay, but also no hurry. It is best to make sure of the exact position of the child, after which the most convenient part is drawn down. It is best to only attempt podalic version in this procedure, for the reason that it is almost impossible to get the head to engage. This is because there is not room enough at the pelvic inlet to permit the hand of the operator to hold the head in position and insure its engagement. Efforts to do so are very likely to set up much irritation, and cause considerable damage. The hand should always enter the uterus with its dorsum toward the adjoining uterine wall. One or both legs, as is convenient, are gently pulled through the os, and held there until the presentation is fixed by uterine action. During the drawing down of the foot, the external hand aids by pushing up the fetal head.

One of the complications of podalic version is the extension of the arms over the head. It is easily enough managed if done right, but otherwise becomes a nasty addition to the problem. Not much force should be used. The fingers of the obstetrician are passed up along the body of the child and along its extended arm until the bend of the elbow is reached. The finger is hooked into this, and traction made in the arc of a circle having the child's humerus for a radius and the shoulder-joint as the pivotal center. The elbow is kept as close as convenient to the front of the child's body, whether the forearms be in front of or behind the head. As soon as traction is made in the right direction, the elbow comes down readily, carrying with it the forearm and hand. No traction or other manipulation should be made during uterine contraction. The hands should be brought down all the way alongside the body.

SYMPHYSIOTOMY.

This operation is a very simple one to the man familiar with the anatomy of the parts, but a dangerous one if done by

one ignorant of all the relations of the region. The skin and supra-pubic fat are incised vertically over the pubes to the extent of about one and one-half inches, after which the interosseous cartilage connecting the two pubic bones is divided. Care must be taken to go through slowly so that the knife does not suddenly pass beyond the bone and injure the bladder. After the birth, the skin and subcutaneous tissues are sewed together, and the pelvic bones are approximated by a firm, wide, peri-pelvic bandage. The patient keeps her bed for six weeks. The undesirable after-effects that may result are failure of the symphysis to unite, and inflammation of the sacro-iliac joints from tension during the partial eversion of the two ossa innominata during the passage of the head, which, if very marked, tears and loosens the articular connections and the inter-articular fibro-cartilage in the anterior portion of the joint.

The operation is indicated in pelves having conjugate diameters varying from two and one-half to three and one-quarter inches. Even a larger pelvis may require it when there is an unusually large fetal head, or when one of usual size is well ossified. The operation, it is almost needless to say, is to be done antiseptically. Sometimes the separation amounts to as much as three inches. Extraction should be by forceps.

Undoubtedly this operation may have serious consequences, and is, therefore, not to be lightly undertaken, particularly upon a prejudiced or ignorant woman, and especially if attended by the same kind of a woman, improperly designated nurse, and deserving, rather, to be called mischief-maker. There is no doubt that a general laceration and subsequent perineorrhaphy practically leaves the patient as well as she was before, while an ununited symphysis after section injures her for life. It is proper, therefore, to go slowly, very slowly, in deciding to do this operation. But it does seem to me that division of the symphysis is preferable to a laparotomy in small pelves with rigid soft parts. In other words, symphysiotomy has its place, and when it is to be performed depends not alone upon the condition of the labor, but also upon the woman's personal peculiarities as well as the competence of her "nurse." Similar remarks apply to the incision of the labia pudendi.

CRANIOTOMY.

This operation, objectionable alike to physician and relatives, is not nearly so often called for since the introduction of symphysiotomy, forceps, and the abdominal operations made practically safe by the present day technique. The future will, as I believe it should, relegate it to the limbo of the errorful

past. Of course, I refer more particularly to the performance of the operation upon the living child, though even when dead, the probabilities are almost, if not, as good for the mother by abdominal section. With a good operator, I believe her chances of injury are decreased by section. But if craniotomy is called for, it should be done early. Most of the mortality is due to delay until the resisting powers of the mother are very nearly used up. The operation is only to be attempted with a conjugate diameter of between two and three inches, or even above three inches when there is a narrow transverse diameter. Other causes of interference with delivery, such as tumors, impactions, fetal deformities (as hydrocephalus), and when the condition of the mother and a dead child demand immediate delivery. It is contra-indicated if symphysiotomy gives hope of success.

The stages of the operation are three—perforation, comminution, and extraction. Perforation is best accomplished with A. R. Simpson's basilyst, which should be pushed to the base of the skull and into the foramen magnum, where it is turned several times, and then opened to insure destruction of the medulla and the birth of a dead child, besides fracturing the base. By the addition of a tractor ("basilyst tractor") to the basilyst, it may be used to comminute the skull. The attachment forms an outside blade. Thus the perforator (basilyst) proper is upon the inside of the skull, while the tractor is upon the scalp outside. The two firmly grasp the cranial bone and its covering pericranium between them. They are firmly closed, and then twisted first in one direction and then in the other, thus fracturing the bone upon each side of the instrument, and wrenching it from its attachment to the base of the skull. This maneuver is repeated all around the skull until it is well crushed. Extraction is readily done with the basilyst and tractor, thus requiring but this single instrument with its attachment for the entire operation. Very often the forceps can be used for extraction. It is well, whenever convenient, to extract the base sideways, and this must be done in some very narrow pelvis.

If the basilyst is not used throughout, Braun's cranioclast is the best companion instrument for comminution and extraction.

During the application of the perforator, the head should be firmly held down by pressure from above the pubis. If forceps have been applied, they had better remain in place for the double purpose of steadying the head, and for attempts at extraction. The cranial contents must be washed out with a good antiseptic solution.

Another method, that of Dr. Donald, of Manchester, England, seems an improvement over the older method. It consists in performing podalic version by the bipolar or internal method, which he maintains can be done despite considerable marrowing, and then delivering the body until the head comes within good reach. He perforates the base of the skull through the mouth. This breaks the base and causes it to double up, while the vault readily collapses under pressure after the contents have been washed out. Traction is made upon the trunk, reinforced, when necessary, by the cranioclast or the basilyst and tractor. In spontaneous breach cases, the same method or another must be used. The usual procedure is to perforate behind the ear or under the occiput. I think Dr. Donald's method the best in all cases unless there are special reasons against it.

EMBRYOTOMY.

Embryotomy consists in the mutilation of the body of the fetus when it is in a transverse position and cannot be turned. If impaction is not so bad as to have killed the child, abdominal section is the preferable plan, both because it is no more dangerous in skilled hands, and in that it saves the life of the child. The reason section is not oftener used is that it is objected to more strenuously by the laity because it involves cutting the mother. I can see no reason why section is not preferable to mutilation. Neither method is safe in unexperienced hands, especially if they are deficient in their knowledge of the anatomy of the parts.

Evisceration is one kind of mutilation by which the presenting part of the trunk is entered by means of a pair of scissors, and the abdominal and thoracic organs drawn out.

Spondylotomy is the severance of the spine, readily enough done with a pair of strong scissors, as it is mostly cartilagenous with only kernels of osseous formation. Spondylolysis is the breaking-up, comminution, of the spinal column. When the spine is attacked, evisceration is usually not required because the soft viscera readily adapt themselves to the narrow passage.

Decapitation (severance of the head) is done in a variety of ways, one of the simplest consisting in the passage about the neck of a short piece of twine, the two ends of which are passed through a tube that is pushed up to the neck. While this is held in place, a sawing motion is made with the two ends of the twine, thus gradually cutting its way through the tender tissues. The body then passes down and out in advance of the head, being aided by traction on the arms. The head

is subsequently removed by suprapubic pressure, or by this combined with traction, say, by means of forceps. These means failing, perforation and comminution may be needed.

ABDOMINAL SECTION.

Delivery of the child through a wound of the uterus and belly-wall is indicated in all cases in which delivery by the natural route is impossible, or as dangerous as the risk of section. It is also to be done in rupture of the uterus, sudden death of the mother, in profuse accidental hemorrhage with the cervix undilated. The dangers to the child are none, and to the mother three, hemorrhage, septic poisoning, and shock. The first should count for little with the abdominal aorta close by admitting readily of compression, and as I have already pointed out in the discussion of concealed hemorrhage. Sepsis is not even much of a possibility with proper precautions. Nor is shock likely to do much damage if the operation is done early, while the mother is still strong, and if she is properly plied with an opiate before operation. From $\frac{1}{4}$ to $\frac{1}{2}$ gr. of morphine should be given hypodermically just before anesthesia, making this process easier, and requiring much less of the anesthetic.

In the preparation of the patient just before operation, it must not be forgotten that communication is to be established, however temporarily, between the vagina and the belly-cavity. On this account, vaginal antisepsis is as necessary as that of the field of operation upon the abdomen. The bladder must be emptied first of all so as to insure its being well out of the way of the abdominal incision, which must be about six inches in length, beginning about two and one-half inches above the pubis to make sure of not injuring the bladder, and extending up in the median line. When the uterus is exposed, it is pushed well into the wound, and incised. The child is extracted either head or foot first, according to which part is at once most accessible. Care should be exercised to avoid closure of the uterine wound about the child's neck, by holding its edges apart at the proper juncture. Then the placenta and membranes are removed, and the uterus forced out through the wound. Hemorrhage is temporarily controlled by compression of the broad ligaments, or by an elastic ligature around the neck of the uterus. Patency of the cervix must be assured before the uterine wound is sutured. At least two deep sutures are placed to every inch of cut, passing through the peritoneal coat and muscular wall, but avoiding the mucous lining. Small catgut sutures are then placed superficially to

closely approximate the peritoneum. The peritoneum is united in folds, the suture on each side passing twice through the membrane so that the doubled-up surface between the two lines of perforations is forced against a similar edge upon the other side of the wound. This insures serous contact throughout, and a prompt plastic union without danger of oozing from the uterus.

After suturing, the uterus is sponged off, and the belly-cavity cleansed, when the abdominal wound is closed in the usual way. The sutures should not be carried directly through the belly-wall, but away from the cut edge halfway through and then again toward the cut edge. This brings the entire cut surface in apposition, whereas passing the suture straight through might allow the central portions to gap though the surface edges are well approximated. The outer surface is then washed antiseptically, and a suitable dressing applied, with a bandage over all. The vagina, too, must be again well douched.

The uterus and ovaries should never be removed for the purpose of making the woman sterile because of an extremely contracted pelvis. It is better in every way, and safer, to simply ligate both Fallopian tubes.

CROSSCUT OF THE FUNDUS IN CESAREAN SECTION.

Two cases of Cesarean section were reported in 1897 in the *Wiener klin. Wochenschrift*, from Chrobak's clinic, in Vienna, upon whom the uterine incision was made crosswise. The advantages of this method, as summarized by Fritsch, are (1) a higher abdominal cut than in other similar procedures, insuring a scar in the umbilical vicinity, with lessened liability to hernia; (2) ready compression of the belly-wound during operation, together with easier compression of the uterus, and greater difficulty of blood entrance into the belly-cavity; (3) a minimum of bleeding readily controlled by the sutures; (4) immediate leg presentation of the child in the uterine opening, and its quick extraction; (5) rapid diminution of the wound after opening of the uterus; (6) most of the uterine wound lies in the pelvis after operation.

In the case cited, operation was done for a much-contracted rachitic pelvis in a primipara of twenty-six years after severe labor-pains had already occurred. Seven deep-buried sutures closed the uterine wound, and stopped all bleeding, while many superficial stitches were used to coapt the peritoneal edges. The uterus was a finger's breadth in thickness

when cut, and did not contract satisfactorily until ergotine was twice injected, and the organ kneaded antero-posteriorly.

Worthy of special note is the fact that the uterine wound was less than three and one-half inches long after suturing and contraction.

The other case was one for cervical cancer that could not be otherwise relieved. After extraction of the child, the uterus was removed. Both cases were marked by slight loss of blood.

PORRO'S OPERATION

This consists in the extraction of the child by the abdominal route, and the immediately subsequent excision of the uterus, ovaries, and Fallopian tubes. It, thus, is unnecessary to wait for labor to begin, and the operation may be performed at a set time and place at any period within the last couple of weeks of gestation. As soon as the uterus is incised, an elastic ligature is tightened around the cervix to stay all bleeding. The placenta is, of course, not disturbed. The elastic ligature may remain or it may be replaced, as is sometimes done, by a *serre-nœud*. The uterus, together with the tubes and ovaries, are cut off above the ligature, and removed. The stump is then drawn up into the lower angle of the wound, where it is held in place by two large pins or knitting needles that have been passed through it at right angles to each other. A suitable protection—say, of wood, metal, or rubber—is placed between them and the belly-wall. In closing the wound, the peritoneum of the lower angle of the incision is stitched to that surrounding the stump. Otherwise, it is treated as usual.

Mueller modified this operation by making the original abdominal incision large enough to allow the entire pregnant uterus and its contents to come through, thus avoiding the danger of the passage of the intra-uterine contents into the belly-cavity. It seems to me, however, that this danger, fairly avoidable by reasonable care, is less than that of ventral hernia when there is so long a scar. It, therefore, seems best to me to use the smaller incision.

The only objection to Porro's operation is the suturing of the stump in the lower angle of the wound, thus insuring constant future traction upon the vagina from this point, and effecting more or less compression of the bladder from behind. It causes considerable inconvenience afterwards, though not in all cases. It is probable that galvano-cautery section of the stump, with a cherry-red knife, would prevent all danger of hemorrhage and sepsis, thus making it safe to drop the stump back into the pelvis.

Chapter XII.

THE CHILD.

ON THE MEDICAL TREATMENT OF UNBORN CHILDREN ; ANTENATAL THERAPEUTICS.

Several years ago, the *British Medical Journal* published the concluding lecture of a series on antenatal pathology by Dr. J. W. Ballantyne. It was freely quoted by the medical press at the time, and, I believe, gave rise to impressions that the author never intended to convey. He simply summed up, in this lecture, what had been attempted and with how much success, with a very poor showing for the medicinal treatment of unborn children, except insofar as its feasibility has been long known and commonly practiced for many years.

He reminds us that all such treatment is primarily maternal, and that there are really but two conditions in which it seems to have a direct effect, these being syphilis and malaria, which, as all old practitioners will recall, is by no means a new story. He also cautions against the use of cinchona and its alkaloids during pregnancy because of the danger of abortion, and refers to Lawson Tait's experience with the chlorate of potassium as being useful in the prevention of abortion.

I have no fault to find with the work of Dr. Ballantyne; in fact, all papers that give a *resume* of past effort and experience, that bring the long-graded stretch of the past up to the dead level of the present, are works of inestimable value. And Dr. Ballantyne has brought all our past knowledge upon this subject up to date, so that the entire field may be viewed in the same perspective, and all its parts valued accordingly. Such a paper serves as a new point of departure; it is one of the main stations upon a long journey.

But I spoke of possible erroneous conceptions resulting, not so much from the lectures themselves as from the quoted portions going the rounds of the medical press. It is the danger of supposing that medicinal treatment of the mother generally affects the embryo or fetus as it does her. This would be an amateurish concept, but it is a common one. So also is the still less excusable one that all remedies enter the blood as such, which, if true, would make them alike effective whether given by the stomach, hypodermically, or intraven-

ously. We do know, however, that most remedies act differently when given in these various ways, not alone as regards rapidity and intensity of effect, but also in regard to the kind of effect. Many remedies are decomposed in the stomach or intestines, and thereby made inert. Others are inert until split up by chemic action in the gastro-enteric tract. Again, after the medicinal substance enters the blood-current, it may act either by producing chemic changes in it or the tissues, or by altering biologic processes.

It is clear that while substances circulating in the blood may act by inducing chemic or biologic changes, they are much less apt to do so in another body with a contiguous but not a continuous circulation, by induction, as it were, similar to the currents induced electrically in closed wire circuits adjacent to one already electrified; two vessel walls and two rows of epithelial cells, aggregating two endothelial and two epithelial cells, that must be traversed by any agent circulating in the maternal blood-current before it can enter that of the fetus. Chemic substances having this power are likely to prove effective upon the fetus—and only such. No one knows much about what these are, though the efficacy of quinine and mercury and the iodide of potassium would justify the inference that they have this ability.

One method of antenatal therapeutics is the attempt to alter the nutrition of the child by modifying that of the mother. This is poor theory and worse practice, for all that has been said about the action of drugs applies with greater force to foods, and more especially to special foods, such, for instance, as are believed to be important in regulating the amount or proportion of the proximate principles of the body. Thus, total abstinence from hydrocarbons will eventually cause a body overloaded with a variety of them (fat) to absorb part of its own surplus store in preference to selecting it with much trouble from nitrogen compounds. The body thus acts with the same regard to economy of effort as does any manufacturer. But it nearly always manages to get pretty much what it needs. If its requirements are greater at one time than at another, and it is deprived of the opportunity of extracting what it needs from substances having it abundantly and readily at hand, it simply appropriates it with necessarily greater effort from the means at hand.

Now a woman carrying an embryo is deprived of "bone-forming foods," whatever they may be, with a view to shutting off bone-forming (lime) salts from the fetus. The mere coincident dieting of a woman, and a seemingly favorable result,

does not, by any means, prove this chemic subtraction theory to be correct. Given ordinary good digestion and a varied diet, and the chemic composition of the blood averages about the same in the individual. The ability of the body-cells to appropriate from the blood what they may require remains the same. What then is done by specially dieting such a patient other than placing an extra burden upon the digestive and assimilative organs? I cannot see that there is much of any other effect. Given then, the blood about the same as it would otherwise be, despite dietetic restrictions, and it is evident that the fetus remains unaffected.

It seems to me that this matter is not so much chemic as it is biologic. It is not a question of making an impossible alteration of the mother's blood, but of inducing trophic changes in the young organism within her. It seems to me more rational to assume that the mother would suffer from osteo-malacia before her prospective child could have an induced qualified rickets. We see again and again how the growth of the fetus seems to destroy the mother's teeth. We see, after its birth, a continuance of this unconscious sacrifice of mother for fetus in all she so willingly yields up all through life for the comfort and happiness, as well as the necessities, of its existence. No, we cannot lay siege to the nutrition of a healthy fetus through its mother's dietary without seriously sickening the mother, or possibly killing both her and her lodger in the attempt. Learn how to act upon the trophic nerve-centers of the fetus, and the trick is done—otherwise our efforts will be crude, amateurish, and a discredit to a thinking age. As yet, we are only in the outer darkness upon the subject of antenatal therapeutics.

MATERNAL IMPRESSIONS.

The entire question of maternal impression is subdivisible into several parts. First, is there such a thing? Second, how and when does it occur? Third, to what practical use could the fact of maternal impression be applied?

Cases innumerable have been cited to show that profound impressions made upon the mother during the earlier weeks of gestation leave their mark upon her offspring. Many of these citations are valueless from a scientific standpoint because not sufficiently substantiated. But there are others that form an unanswerable demonstration of the fact that impressions upon the mother may be, and often are, transmitted to the fetus. The shock of an impression, as we all know, often proves great enough to cause the uterus to expel its contents. We

also know that the presence of a dead fetus or embryo is not long tolerated by the uterus, which soon begins expulsive efforts after the death of its contents. Nor is it a foregone conclusion that the expulsion of the ovum is due, primarily, to the effect of the shock upon the uterus, for it may be due to the death of the embryo from the shock received by the mother, the uterine contractions thus becoming secondary. While I am aware that this view will not find ready acceptance among many, it is nevertheless a nice question to decide, and without going into detail, I incline to the belief that the shock often primarily kills the fetus, and thus indirectly causes the abortion. Now, a shock upon the mother that may entail the death of the fetus, which is a total permanent arrest of its development and functions, warrants the belief that similar maternal shocks or vivid impressions may also cause a partial arrest of development in the embryo. To deny this is to deny the self-evident relation of the whole to one of its parts. It must, therefore, be conceded that it is rational to suppose the transmission of more or less modified impressions from the mother to the fetus.

But how is this accomplished without any of the usual recognized means of communication of nerve-impulses between the mother and child? A positive answer to this question is inadmissible in the existing uncertain state of our knowledge upon the subject of transmitted mental impressions. But we do know that the material connection between the mother and her embryo is as unbroken as that between the gray matter of the brain and the motor-plate at the end of a muscle nerve-filament. In the latter, impulses are transmitted along the axis cylinder; in the former—simply through other intervening media. Why are certain articles of food so repellent or injurious to some, and yet so attractive and beneficial to others, though both organisms are, to all tangible appearances, substantially identic? We simply do not know, and the explanation of this well-known phenomenon is as difficult as is the explanation of the transmission of a maternal impression to the embryo.

Impulses are assumed, and in some instances proven, to travel in waves. Thus a nerve-impulse traverses the axis cylinder of a nerve to its destination. Waves are best and most evenly transmitted through homogeneous material, because the rhythm is unchanged. The axis cylinder is homogeneous, alike from end to end and from periphery to center. But impulses also traverse heterogeneous, or unlike, media, though with diminished facility. Then why should not a powerful maternal impres-

sion give rise to an impulse that pervades the whole organism to such a degree as will cause it to traverse the embryonic sac and its liquid to the embryo within, there to find a final lodgement in the delicate developing nerve-centers that are about to control the development, the building up, of the future child? Every cell of the nervous system has its particular function. Why, then, may not allied impulses, by impinging upon new nerve-cells having like or related functions, arrest their growth, and thus nullify their intended nutritive effects upon the tissues they were destined to supply with trophic impulses? In other words, an impression made upon a cell in the mother's brain through the medium of any of the senses, may be transmitted to corresponding cells in the embryo so that what shocks the parental cell destroys its counterpart in the embryo. Thus a sensitive woman receives a blow upon the upper lip from the fist of a hitherto beloved husband. It is the first time, and she is a few weeks or months pregnant. She loses consciousness, not from the force of the blow, but because of the shocking circumstances attending so unhappy an event. Repeated mental agony attends every recollection of the occurrence, which burns itself alike upon her lip and her brain. Thus does a peripheral impulse (at the lip) intensified by the mind (mental anguish) pass to the trophic nerve-cells of the mother's brain controlling the nourishment of that part, thence to be as often transmitted to similar cells of the embryo, and only to these because they are fitted to receive them. They become shocked into inaction or death, resulting in the incomplete development of the lip—a hare-lip. This supposed selective action has its counterpart in the retina and in the cochlea, where sight and sound waves, respectively, are only detected, cognized, by certain filaments attuned to just such impulses, and no others.

This is a ready explanation of a series of common occurrences. The fact is before us; the explanation is not proven, but it is adequate. Now what is the lesson? Simply this, that the mother, at least during the earlier months of gestation, should avoid repeated and violent mental impressions, particularly of an undesirable kind. The human fetus is, like the human adult, the most susceptible of all animals to extraneous influences. Breeders of lower animals have long ago learned that the prospective mother must be carefully guarded to insure good offspring. Undesirable occurrences to the pregnant female leave their unwelcome impress upon the young in proportion to their intensity and frequency of repetition.

The lesson this teaches, therefore, is that the mother

should be placed under the most favorable mental and physical conditions to insure offspring of maximum physical and mental quality. The details should be controlled by the family physician. He sees in some families one or more pronounced disturbing elements that must disadvantageously influence the mother to the possible, if not probable, injury of her future offspring. There are dangers which he can foresee, and which he should attempt to remedy.¹

INTRACRANIAL BLEEDING IN THE FETUS.

Intracranial hemorrhage is a much more frequent accompaniment of labor than is generally supposed. Many of the peculiarities of the child during the first week are due to cortical irritation from this cause. Many deaths are also attributable to this accident. I have examined the dead bodies of many newly-born children, and found no other cause of death than intracranial hemorrhage, some being still-born and others having lived for a time. Many of these, as I had occasion to say earlier in these papers, had not been subject to forceps-pressure. When the bleeding is excessive, death ensues necessarily. Otherwise, there are varying degrees of cortical irritation manifested by the usual symptoms, such as enuresis, muscular twitchings, or local or general convulsive seizures, and, finally, notably in fatal cases, drowsiness, stupor, and coma. There is, practically, no medical treatment. Pressure-symptoms may be relieved by opening the skull to let out effused blood, a simpler procedure in the infant than in the adult. Aperients may be of some use in lessening blood-pressure by the abstraction of fluids from the body, but I doubt their efficiency in these cases. Calomel is probably the best one to use for this purpose. Cold applications have also been made to the head, but this also has its drawbacks so early in life when there is no fever. It seems to me that there is nothing else to do in the milder cases but to wait, and to open the head in the more serious ones.

CRANIAL DEPRESSIONS IN THE NEW-BORN.

The depression of the cranial vault due to forceps delivery is quite often seen by the busy practitioner. Reference is not now made to depressions of the edematous scalp, which are

¹ This attunement of transmitting and receiving instruments, with a more or less varied intermediary, is well exemplified in wireless telegraphy, where only instruments similar to the transmitter can receive and record its impressions. So also have I long ago been of the opinion that the peculiarities of every community are largely due to impalpable mental interactions between its component units. While electricity acts more especially along continuous media, magnetism, on the other hand, seems to act indifferently through contiguous ones.

the inevitable accompaniment of all necessary forceps deliveries, but to actual depressions of the bone itself. Many of these cases right themselves spontaneously, and the child never appears to have been any the worse for the experience. On this account, it is customary to leave such mishaps to Nature. But she is not always equal to the task, as is shown by occasional instances in which the depression remains, resulting negatively in extremely few instances, but followed, most times, either by death in a few days to as many weeks or months, or in subsequent cortical irritation, ending, eventually, in confirmed epilepsy and any of its innumerable accompaniments.

These statements are based upon well-substantiated facts that it is not now necessary to indicate, and I utter them in the hope that what is to follow will make a practical impress upon the reader. I do not know just how large a proportion of new births have these cranial depressions, nor as to how large a proportion of those who do have them remain unrelieved by Nature, and are thus condemned to a defective existence unless aided early by the medical attendant, but I do know that they occur often enough to require the help of many physicians every year. Relief has been repeatedly given these cases, and always with safety and good effect, but a short time after birth.

Experience has also shown that depressions of the occiput are the least frequent, while those of the sinciput are most apt to resist Nature's unaided attempt at rectification. Cranial depression has also resulted from spontaneous deliveries, the indentation being caused by abnormal projection of the bony pelvis into its own cavity. Thus the inward projecting ischial spines in a narrow pelvis, or the forward projection of the sacral promontory in a flattened inlet, may quite readily cause the trouble.

Immediate relief by surgical interference is called for if there are any cerebral symptoms, such, for instance, as one-sided convulsions, or hemiplegia. If there are no disturbances attributable to the depression, it may be left alone for from two to four weeks, at the end of which time, even if there is no disturbance calling for interference, if the depression still exists, it should be corrected by surgical means in anticipation of almost inevitable future disturbances that are apt to be irremediable, even by operative interference, because of the established habit of the nervous system, that becomes firmly developed during the growth of the symptoms, and the final decision of patient and parents to be properly attended to.

Of the methods for operative relief, there are two, or, I might say, three. The simpler method, because most readily accomplished, especially in emergency, is the incision of the scalp and cranial membrane at the edge of the fontanelle nearest the depression, through which a slightly curved, thin, flat piece of metal, like a surgeon's elevator, is introduced until its end rests against the point of greatest depression, when outward pressure is made with sufficient force to spring the bent bone back into its normal position. This has even been done with a bent pair of scissors. The other method consists in making a Y or X incision over the depression, stripping back the skin and periosteal flaps, and applying the trephine. A half-inch button of bone is sawed out, and the elevator used to replace the surrounding bone, after which the button and flaps are replaced, and the latter sutured. The whole work should be done as aseptically as possible.

Previous to trephining, the attempt may be made to pull the bone back into place by means of pneumatic traction. Sometimes this succeeds, but it is usually more difficult of performance than either of the other two methods for lack of facility. Better still than trephining, it seems to me, is to make a Y or X shaped cut through the depressed bone, and then elevate from the point of juncture of the incision.

A child several weeks old has been trephined without the use of an anesthetic, and nursed and slept quietly after the operation was completed. There are numerous instances of operations upon very young infants without untoward consequences, though no anesthetic was used. Their sensitiveness to pain seems thus early to be very poorly developed.

In conclusion, I would therefore suggest in all cases of cranial depression at child-birth : (1) To remove the depression at once if there are any accompanying symptoms ; (2) to await the efforts of Nature for two weeks if there are no such symptoms ; (3) to operate any way at the end of this time, though the child appear perfectly well, if the depression still exists in as marked a form as it did at first.

ON EIGHT MONTHS' BABIES.

One hears a good deal now and then of eight months' babies, and many believe a babe born at this time to be less liable to live than one born at seven months. However, an eight months' baby has a better chance of living than has one of seven months, and one of seven months more than one of six. The nearer a child is borne to full term, the better are its chances of survival. But there is a reason for the popular

belief that a seven months' child is more liable to live than an eight months' one. Physicians are, to a certain extent, responsible for this. There is also an old saying to the effect that eight months' children are only born to married primiparæ. I had such a case several years ago, and this is how it happened. A young lady, and she was a very modest girl, was engaged to be married, and had permitted her affianced husband to go too far. Impregnation ensued, marriage was delayed a month, and an eight months' baby was the necessary and logical outcome. Fortunately for her, though a large woman herself, she had only a $4\frac{1}{2}$ -pound baby. The occasional necessity for eight months' babies—eight months after marriage—makes them relatively common in married primiparæ.

A seven months' child is more positively recognized than one of eight months. Real eight months' children are often overlooked, while one of seven months cannot be because of its incomplete development. Women who have borne children before, or who have been married for some time, are not always sure about their last menses. Then, again, there is the occasional occurrence of one or two menstruations after impregnation. If the child is a little below the average in size, but is fully developed, it goes as a nine months' baby, and the woman is believed to have erred as to the date of her last menstruation, or she is supposed to have done so once after conception. But if the child is incompletely developed, and besides this is very small, its prematurity is readily seen. In other words, few eight months' babies are recognized—all seven months' ones are. The risibilities of the knowing ones are always excited by the statement that an individual was an eight months' child—if it is known that the birth occurred only eight months after marriage.

PART III.

On the Change of
Life in Women.

FOREWORD.

It is not out of the way to say that in the proper treatment of the change of life great reputations may be made by those of us who will give the matter earnest attention. The entire problem involved in this period has been so neglected that it affords every earnest student of its requirements a liberal reward, both in the entailed satisfaction of work well done, and in its monetary recompense. To those who wish to succeed in the practice of medicine, especially to those about beginning their careers, I would suggest the mastering of this problem, for by this means they will be enabled to give unusual relief to a class of sufferers who seldom find the easement they are in search of, and who are correspondingly grateful, and have, besides, the influence, because of their maturer years, to bring other patients. So I would urge the younger man to cultivate the woman at the change of life as much as, or even more than, he does the young mother, for the good she may do him in return for what he does for her. Listen to her complaints carefully and patiently, for this is necessary to know what to do, and she wants your sympathy, and needs it, and cannot get it from the too busy older practitioner. Be wise, do good, and be helped.

Chapter I.

ON THE CHANGE OF LIFE IN WOMEN.

There is probably no epoch in the life of a woman living out her allotted period that is so important as that which is called the change of life, or the menopause, or by the other numerous designations given this condition. It begins with the cessation of menstruation, or marked menstrual irregularity, and ends with the termination of the varied disturbances incident to this period. It is not only a change in the sense that the menstrual flow ceases, but in the far wider one that it marks the beginning of a new era in the life of woman, that it is the forerunner of a newer and a happier life, that she may once more take up the social functions that very often are neglected with the entrance upon the married state, and the consequent duties and handicaps of recurring pregnancies and multiple maternity. This period brings with it three alternative prospects for every woman entering upon it, and it is the duty of the physician to see that the best of the three falls to her lot. She should be a better and a stronger woman in every way after discarding the discomforts and risks of the child-bearing period; but she may not be able to do it, and may, instead, struggle for years in the vain attempt to reach this desirable goal, only to give up her life in the impossible trial, or she may continue the struggle indefinitely for many years. That her life beyond this period is so commonly different from what it should be, is mainly the fault of defective education, not only of the laity, but of the medical profession as well. All the annoying discomforts of this time of life should receive the most careful consideration. It ought to be made as pleasant as it can be done. She should be eased wherever this is possible. But the tendency is to relegate all complaints at this time to the great limbo of patient suffering, because it is Nature adjusting the system to the change. So is the pain of an operation an adjustment of nature to a change, but we give an anesthetic nevertheless. We do likewise to relieve the pain of a fracture or of a peritonitis. It is seldom necessary to suffer much pain and discomfort to insure good results to future health; in fact this end is better attained when the bad effect of

suffering can be reduced to a minimum. So it is at the change of life in women. Whatever helps to ease her during this transition promotes her future wellbeing and tends to prolong her existence. I utter nothing but truisms in making these statements, but they are important to repeat for the reason that they are usually overlooked.

THE NATURE OF MENSTRUATION.

So much for the general introduction of this subject, the intelligent consideration of which, however, is not possible without an inquiry into the nature of the process of menstruation. Of its true nature, nothing definite of practical value is known. Much has been surmised, and what is accepted as fact to-day may be rejected as speculative nonsense to-morrow. It is safe to say that we shall understand very little of the pathology of the menopause until we know a great deal more about menstruation than we do now. Some remarkable theories have been advanced to account for the regular periodic loss of menstrual blood, and among these none is perhaps more so than that which holds the entire menstrual process to be pathologic, and due mainly to the upright position of woman. Others have looked upon it as the peculiar eliminative process of the sex, and that its cessation during pregnancy was due to the diversion to the growth of the child of certain material, in the mother, destined for elimination. Probably the most sensible are those who frankly say that they do not understand just what it is. More detailed information upon this subject may be found in the other two parts of this work under appropriate headings.

FREQUENCY OF MENSTRUATION.

What we do know is, that the flow appears on an average of every twenty-eight days, that the quantity varies widely in different women, though very little in the same woman, and that it does not affect all alike, nor the same woman always the same way during her entire menstrual life. It is also established that the elimination of urea reaches its maximum just before the beginning of the flow, and its minimum immediately at its conclusion. That would appear as if the flow from the uterus in some way made up for the usual throwing off of urea between periods, and to that extent it would seem to uphold the elimination theory. But it may, however, simply exercise an inhibitory effect upon the excretion, or even formation, of urea. So far as I am aware, this has not been

determined. It is probable that the natural passage of urea with so much blood makes it unnecessary for the kidneys to be as active as usual.

Ovulation is a term often used synonymously for menstruation, but it is not correct, for the one may occur without the other; in fact, ovulation takes place irregularly all the time, even before the menses are established, while the menses sometimes continue after excision of both ovaries.

NATURE OF THE MENOPAUSE.

In the quest of rational explanations of phenomena, men have often been led to the most irrational conclusions. This is particularly true of the many attempted explanations of the menopause. Thus the blood theory had it that the loss of the small amount of blood cast off at each period relieved the system of an oversupply. But if this were the truth, a loss of double the amount must have had very disquieting effects, but it did not. It must be remembered, in this connection, that it was held, and still is by some, that the failure to get rid of this excessive accumulation of blood caused its loss from other parts; hence vicarious bleedings, as from the nose and lungs. If this were true, the withdrawal of the usual quantity of blood from the arm or other source, in stoppage of the menses from the effects of cold, would relieve all the discomforting symptoms of the checked flow. But it has no such effect. It is more than a question of blood-loss at regular intervals, the flow being merely incidental to the main process, whatever this may be.

Another theory ascribes to the irregular action of the nervous system, and its perverted reflexes all, or nearly all, the phenomena of the change of life. This theory is more plausible than the bloody theory; but it is only part of the truth. It did well enough in the days of a poorer physiology than that of the present. Of the generation of special juices by glandular bodies nothing was known until recently. Their potency was not even suspected. To the great connecting nervous system all these phenomena had to be ascribed, and, so far as this went, it was right. But it did not settle the question as to what caused these unusual nervous activities. Now we can ascribe it to altered secretion of the ovarian juices. This may be called a combination of the nervous and chemic theories. Thus the sympathetic nerves and ganglia controlling the nutrition and activity of the ovary, or ovaries, may become diseased or out of order, thus, in turn, disordering the work of the ovary so that it again reacts upon the

general nervous system, both sympathetic and cerebro-spinal, setting up a long list of ailments, the special character of which depend upon what may, in each particular individual, be the susceptible part, or parts, of the body. This is not getting down to bottom facts, but it is getting nearer to them than we ever did before. There is now an accounting for some of the nervous vagaries due to chemic changes amounting almost to demonstration. But we still cannot satisfactorily explain the cause of the original disturbance. And it would be a gross error, in my opinion, to look for any one cause to account for all the phenomena of the change of life. It is not to be explained by any one thing. The entire period is a complex phenomena with numerous and varied primary causes. This, I believe, is certain. A local congestion due to cold or injury may be a primary cause. So, also, may continued irritation from chronic constipation, either because of the ensuing steady pressure followed by its occasional excessive increase incident to the forcible expulsion of dry stools; or to poisoning from absorption of too-long retained excrement. I mention these few illustrations of my meaning to insure an understanding of what I meant by primary causes. The tendency to look for causes beyond our immediate reach seems to be ever present. Just as a foreign innovation is more apt to gain headway than one of domestic origin, so are we more apt to credit a roundabout explanation of a condition than we are one that is direct and simple. This tendency we must seek to divest ourselves of, for the reason that suppositious causes that lie close to hand, besides being the most likely ones to be real, are also the most readily, as well as the soonest, proved or disproved.

I might go on to a much greater extent in the discussion of these matters, but as they touch upon the speculative, I prefer, in the brief space at my disposal in these pages, to approach the more directly practical part of the subject as rapidly as possible, trusting to future portions of this series for the further elaboration of speculative matter as occasion may arise for its presentation in a more practical light.

TIME OF CESSATION.

Cessation of the menses has occurred at various ages all the way from 20 years of age up to beyond 100 years. But it is commonest at about 45. The duration of the changing period varies greatly from a sudden uneventful stoppage to many years of inconvenience or suffering. The variation is due to race, climate, personal idiosyncrasy, and disease, both

local and general. There are many instances of permanent stoppage due to sudden nervous effects, as fright. The artificial production of the menopause by removal of the ovaries comes under the heading of disease, for it is only for some diseased condition that organs are removed. In the tropical climates, menstruation begins and ends early. It is a rule, however, for those who begin early to end late, and, conversely, for those who begin late to end early. Frequent pregnancies tend to postpone the menopause.

RICH AND POOR.

Well-to-do women are more apt to suffer from nervous trouble at the changing period than are their less fortunate sisters, for the reason that they have a more sensitively organized nervous system because of education and mode of life; nor have the poorer and hard-working women the opportunity to indulge those finer susceptibilities during the exigencies of their household cares or the eking out a living at service, at the washtub, in the factory, shop, or mill. Theirs is more apt to be some organic disease rather than a neurosis.

THE RELATION OF PUBERTY TO THE MENOPAUSE.

Attempts have been made by some writers fond of generalizing to see a connection between the behavior of puberty and menstruation. In this idea, too, we have an entirely gratuitous assumption, for even if it could be shown that there was some relation normally between the two periods in regard to their behavior, the many occurrences happening during the intervening thirty odd years would be so apt to modify the natural tendency as to make all calculations at puberty an utterly fallacious guide. It is, therefore, safe to say that the manner in which puberty has affected the system is no guide as to what will be the effect of the menopause.

MENSTRUAL AND CLIMACTERIC AFFECTIONS.

We know that menstruation is very commonly marked by perturbations of the nervous system, some of them so decided as to require unremitting medical aid to give the patient reasonable comfort, sometimes even requiring operations for relief. There are many menstrual insanities limited to the time of flow, or very nearly so. An analysis by Tilt of 500 cases of women treated during the menopause, shows 119 distinct diseases or symptoms afflicting them. The commonest was nervous irritability, from which 459 suffered. The next most frequent was flushes, in 287. Some of the ailments in this list it would not

be fair to ascribe to the menopause, nor does Tilt claim that they were due to this state ; but it cannot be gainsaid that this condition influenced them adversely. The diseases of this period are usually those which affect the nervous system and the digestive apparatus. This period also differs from that of any preceding time of life by being accompanied by more or less debility, thus tending to chronicity, and retarding pathologic processes. Diseases, which earlier in life would have run a rapid course, at this time grow more slowly.

The avoidance of a disagreeable menopause is largely secured by toning up the system towards a vigorous pitch. Upon the first sign of commencing cessation, or of irregularity, after 40 years of age, every effort should be made to lessen the tax upon the physique, and to build up the tone of the entire nervous system, both cerebro-spinal and sympathetic. Good food and fresh air must be conjoined with moderate exercise, and plenty of sleep. This is all particularly true of excitable women, while the more phlegmatic are little disturbed by the reflexes of this period. Full-blooded women are most apt to be troubled with floodings. It is claimed that women of a nervous temperament, associated with a tendency to billiousness, are the most apt to become insane at this time. I recall one marked instance of this kind. She was 45, well educated and refined, exceedingly sensitive, and easily excited, and had always been troubled with periodic attacks of torpid liver. During her menopause, now nearly two years past, she had decided attacks of melancholia, with occasional inclinations to suicide. At the conclusion of her change, these symptoms left her, and have not returned.

SINGLE AND MARRIED WOMEN AT THE MENOPAUSE.

The point is made by some that single women are more apt than those who are, or have been, married, to diseases at the change of life, but there is no warrant for this conclusion. Many women are damaged by the child-bearing process, a factor that does not, as a rule at least, enter into the case of single women. Nor is the statement, occasionally met with, that prostitutes are liable to special suffering at this time, borne out by the facts, for the simple reason that they are usually either dead or out of "business" long before the change begins.

ON THE HYGIENE OF THE MENOPAUSE.

Just as it is usual to neglect the girl at the beginning of menstruation, so is it also the custom to neglect the woman at the approach of the change of life. The reasons for this are

identic. Both are recognized as natural processes, and as such are deemed not likely to require extraneous aid. Discomforts are patiently borne because presumed to be natural and unavoidable. Proper attention at the inception of trouble would usually prevent years of suffering and many an early death. And the fault rests not alone with the general public, but with the profession as well. Despite the teachings of experience and the writings of men who have made a special lifelong study of these states, most practitioners go along their easy jog-trot way oblivious of the fact that they are permitting their confiding patients to gradually and surely drift into a hopeless state of suffering and despair. When it is considered that this condition is generally associated with more or less mental perturbation, and that women are then more than usually apt to grieve and become morbid over both real and fancied ailments, the urgent necessity for prompt and effective treatment becomes clearly manifest. It is the duty, then, of the family physician in particular to freely advise his women patients of the nature of the menopause, and the liability this condition brings with it to disease and future discomfort that can only be guarded against by immediate attention to the laws of health, and, if need be, to remedial relief by medical effort. Were this practiced more than it is, there would be fewer serious cases at the change of life. What is the proper hygiene for the change of life? becomes, then, one of the all-important questions. It seems to me to be the first one in importance as well as in logical sequence, for it is the means of preventing the necessity for medicinal treatment.

Whatever truth there may be in the theory that menstruation is an eliminative process should be taken full advantage of by maintaining free action of all the emunctories. These are the kidneys, bowels, skin, and lungs. These I shall consider in the order given, but not so fully as might be, for the reason that it is my aim to give an outline that the reader can fill in according to his own experience and the peculiarities of the neighborhood in which he is active, both in regard to the local conditions and the peculiarities of the population. Thus race and nationality will have a marked influence upon the treatment of a case according to any definite advice. So also will the differing conditions of the low and high lands alter the necessity, as well as effect, of drugs. It is, therefore, evidently more within my proper scope to indicate the conditions that exist, and the effects to be produced, while leaving to each practitioner the selection of the means by which these effects are to be reached in each particular case. And yet, I shall not

refrain from naming more in detail some of the remedies that have been used with signal benefit. That some may find them of little use is no reason why others who may find them of value should not get the benefit of their established excellence.

Chapter II.

ELIMINATION IN GENERAL.

Sometimes it happens that while all the eliminative organs are doing their work properly, it is not done right by the tissues or cells themselves. Under such circumstances, other measures must be resorted to. Anything that will stimulate and equalize the circulation will insure better cellular activity, and one of the best means of doing this is exercise, especially out of doors. But among the medicinal agents, none are better than mercury, the iodide of potassium, and colchicum. But they are all more efficient in small doses than in large ones. Say 1-100 grain of the bichloride of mercury, 1 grain of the iodide, and 1 or 2 drops of the wine of colchicum every four hours. Greater promptness will follow moderate eating during this attempt to increase the eliminative action of the cells, and it will be quickest accomplished if food is abstained from altogether for a day. This is by no means a hardship to the average patient in this condition, for they are usually devoid of any appetite, and it is more a punishment for them to eat than it is for them to leave food entirely alone. Other things may be said upon this subject, but it seems to me needless, because it would be but a repetition, in principle at least, of what has already been said.

THE CARE OF THE KIDNEYS.

That the effect of the menopause upon the kidneys is to check their secretion is a well-established fact, though it is not yet determined just how this is done. It is supposed to be due to a congestion of the renal circulation, and consequent choking of the glomeruli and tubules. But this is mere guesswork, and will do until we know more about the matter. To bear out this belief, these cases have the common symptoms of tension, nausea, emesis, and intense headache. As an indication of their cause, there are severe posterior lumbar pains. Added to this, we find diminished excretion of urine, often albuminuria, and sometimes hematuria. Should there be coincident diarrhea, it is best not to check this until the renal functions have been fully restored, and the mere restoration of function of the kidneys may relieve the diarrhea. In fact, it is always well, when these so-called critical discharges exist, to look for

the diminution or suppression of some natural discharge. In such event, the proper cure for the trouble is the restoration of the natural flow of the excretion that is held in abeyance. Tilt long ago suggested that the frequency of the various troubles of the menopause indicated to him the course to be adopted in the relief of the ailments of this period. But this seems to me to be but half the truth, for while this might indicate the proper line of treatment in some instances, in others it would point to something entirely different. Thus, if a critical diarrhea took the place of a suppressed flow of urine, it would have to be encouraged until the flow of urine was re-established, but if nausea and headache were accompanied, say, by constipation, it would be right to restore the activity of the gut, and not to bind it still more with opiates.

I hardly deem it necessary to go into details about the means to be adopted for the restoration of a sluggish kidney to normal activity, but it should not be forgotten that food products should be given the preference over drugs whenever this is admissible. Thus milk and buttermilk are good diuretics, and so is water; perhaps none are better in most instances. Local congestions may be relieved by dry or wet cupping in the lumbar regions. Another point, and one that is overlooked with astonishing frequency, is the fact that fruits should not be prohibited in acid or over-acid urine, for the fruit acids are all converted into alkaline carbonates in their passage through the system, and are eliminated as such, thus tending to lessen the acidity of the urine rather than increase it, as so many erroneously suppose. I knew of an instance of this kind but a short time ago in which the patient, who had for a long time been in the habit of eating one or more oranges at breakfast, stopped their use entirely at the behest of her physician because she had some rheumatic symptoms! She promptly became constipated again, and all her symptoms were speedily aggravated. After some time, I was consulted, and at once ordered a return to the fruit. The result was eminently satisfactory. Whenever there is a tendency to renal complications at the menopause, the patient must be most careful to avoid exposure to wet and damp.

The close relationship between the menstrual function and the kidneys is well shown by the frequency with which one meets with lessened urinary flow and high-colored urine during the menstrual period. Sometimes this condition exists periodically for some time after the cessation of the menses. If marked by no unfavorable signs, it must be viewed as a temporary reflex, and should not be interfered with.

THE CARE OF THE BOWELS.

It is not unusual to meet with a periodically recurring diarrhea about once a month after the cessation of the catamenia. It is a true critical or substitutive discharge, and ought not to be interfered with, in fact may, with advantage, often be encouraged if discomfort arises in other parts of the body, such, for instance, as headache, notably if there is coincident lessening of the discharge. Of the two remedies that seem to me to act the most satisfactorily, I incline to cascara sagrada and Epsom salts. The former is to be used for its agreeable laxative effect, and should be taken regularly, say in five-grain doses every night, or as often as may be needed. For more decided effects, but without discomfort, the salts are to be used, especially to overcome congestions, say of the intra-pelvic viscera. Preferable to either of these, however, is the use of laxative foods, such as oatmeal or oranges at breakfast. It must also not be forgotten that women are notoriously deficient water-drinkers, and by water I mean liquids generally, and no regimen having in view daily stools is apt to succeed if an adequate supply of liquid is not taken into the system. Sometimes the drinking of an additional glass of water once or twice a day, say upon going to bed or upon rising, is enough to insure the desired end.

THE CARE OF THE SKIN.

Observation will satisfy any one not yet conversant with the fact, that many women at the climacteric do not perspire, or do so with difficulty. They also usually complain of the vague symptoms of deficient elimination, and they are readily relieved by the use of any of the remedies that insure a free perspiration. Vapor baths are not so desirable in these cases, because too apt to be debilitating. Another reason, in many instances, is the fact that some women at the menopause already have sufficiently degenerated blood-vessels to make the use of a hot vapor bath dangerous because of the possibility of the induction of cerebral hemorrhage. It is, therefore, better to depend upon medicinal agents, such as aconite in the plethoric, or pilocarpine in those not so strong.

There are also cases of critical discharges from the skin, corresponding to what I have said of similar states of the bowel. The cause is substantially the same, and the general principles already enunciated in that condition are equally applicable to this, though the remedies are necessarily different. I may add that in all instances where it is found that the skin

is either over- or under-active, that it is best to order a daily bath for the purpose of toning up the skin if it be below par, and of soothing it if in an overfunctional condition. Tone may be the better secured by the local use of alcohol or one of its commercial compounds. At the same time search should be made for some other organ that may be short in its eliminative work. Sometimes the correction of this will relieve the skin so that it requires no further attention.

THE CARE OF THE LUNGS.

By the care of the lungs, I do not mean it in the same sense that one does when using this phrase as a safeguard against the great lung disease, phthisis, but simply as an eliminating organ. And yet, what will do this will go a long way toward guarding against the other affection. The circulation should be good, and the respirations deep and frequent. A moderate amount of exercise insures this better than any drug can do under most circumstances. One of the best of the many outdoor exercises is bicycle riding. It is much easier than walking, all other things being equal, and is most exhilarating. It may be ridden with perfect safety at this time of life, if done with a little common sense in the effort, both as to speed and strength of the patient. Frequent deep breathings may be practiced in lieu of outdoor work when this is not practicable, and should be specially done just before retiring and upon rising. One of the most agreeable, as well as most efficient, exercises for the lungs is singing. A woman who can sing with pleasure should not neglect to take this exercise daily if she is as much in need of it as are some at the menopause.

Chapter III.

FUNCTIONAL DISTURBANCES.

REMITTENT MENSTRUATION.

There are numerous cases in which menstruation occurs at irregular intervals with a blood flow of varying amounts. These are merely manifestations of an irregular action of the nervous system, probably due to changing intensity of the effect of the cessation of this function upon the spinal centers. If the bleedings are not severe enough to cause alarm, and if there is no special local treatment required, it is best to use some of the uterine sedatives already indicated. Otherwise, expectant treatment is the best. If there is much hypogastric or back ache, the use of the faradic current from a long fine wire coil is one of the best analgesics. One pole may be placed upon the back and the other upon the lower belly-wall.

VICARIOUS MENSTRUATION.

Occasionally there occurs an interesting case at the menopause in which the menses cease, but there appears instead a periodic flow of blood from some other part of the body. This vicarious flow may emanate from the nose, lungs, stomach, rectum, or kidneys. Its characteristic is its intermittency for the usual period, its stubborn recurrence despite treatment, and its spontaneous cessation at the end of the vicarious period. It is readiest checked by resumption of the menstrual flow, but this is not always attainable. Emmenagogue pills often suffice, sometimes the stimulating faradic current secures the desired result, and at other times nothing seems able to do it. If no discomfort or bad effects follows the vicarious flow, it may safely be permitted to persist in its erratic course. The only variety that seems to me, on theoretic grounds at least, to be fraught with danger, is bleeding from the lungs, for the gravitation of the blood to dependent parts of the organ may set up a localized pneumonia that may ultimately, especially if there are recurrences, cause death. It seems to me safest, therefore, in lung cases at least, to attempt a restoration of the natural function, and its maintenance, until it may be allowed to stop without vicarious manifestations from the lung.

Sometimes there may be a slight hematuria or none at all, and yet there may be severe renal congestion, causing diminished or suppressed urinary flow, together with albuminuria, lumbar ache, nausea, emesis, and severe headache. These cases occur mostly in women tending to rheumatism or lithemia. The treatment during the paroxysm is in lumbar sinapisms, dry or wet cupping, according to the severity of the symptoms, and the free use of hydragogues and diaphoretics, or the sweat bath may be used. Diuretics should not be given. Between periods the urine should be examined, and treatment prescribed according to the findings, as in any other case not at the menopause.

UTERINE BLEEDINGS.

Bleeding from the uterus may vary from the mere occasional appearance of blood in the vaginal discharge to a steady flow that soon proves fatal if not arrested. Latter-day intra-uterine surgery has, however, made long-continued bleeding a rare affection, or it may occur intermittently with much profuseness. Sometimes the menses become very irregular in time of occurrence, but dangerously profuse in amount. In short, bleedings from the womb may occur continuously or at intervals, in amounts varying from the smallest to a fatal hemorrhage.

The bleeding may be due to various causes, such as obstructed return-flow of blood, a spongy endometrium, vascular relaxation of nervous origin, exaggerated menses, erosions, and neoplasms.

Hemorrhages of nervous origin are often induced by sudden severe impressions upon the nervous system, as fright, anger, shock, or unusual exertion. The treatment must always depend upon the underlying cause. If of nervous origin, the patient must be set at rest and quieted if there is a sudden exciting cause, and all irritability must be allayed. If, on the other hand, there is a neurasthenic condition, the patient must be toned up to the normal pitch, and for this purpose nux vomica combined with cimicifuga is an efficient remedy. I use $\frac{1}{2}$ grain of the nux vomica extract to 10 drops of the fluid extract of cimicifuga, and give them four times a day.

Mechanic obstruction to the return-flow of blood requires the restoration of normal circulatory conditions. A prolapsed uterus requires a ring pessary, and if this is too irritating, an antiseptic elastic tampon, for which purpose oakum is an excellent material. A flexed uterus should be replaced and held

elastically in position by means of the long soft rubber intra-uterine stem. If there is merely version, a suitable pessary or oakum tampon is indicated.

A spongy endometrium has no excuse for existence in these days. It should be removed at once, but this must be done thoroughly and quickly. During the process of curettement, an occasional flushing of the uterine cavity is desirable for the double purpose of washing out retained *debris*, and of noting whether there is still any flow of blood. Sometimes, of course, bleeding will continue for a while even after scraping. And I trust that I may be permitted to add parenthetically that there seems to me no valid reason why this plain English word "scraping" is not more desirable than the imported word "curettement."

Bloody flows that are evidently menorrhagias probably require treatment directed to the nerve-centers governing the vascular apparatus of the uterus and its adnexa. The well-known uterine tonics, so-called, should then be used. They hardly require enumeration, though I name *cimicifuga*, *vi-burnum*, *sumbul*, and their combinations under suggestive names put up by some of the large pharmaceutic firms.

Erosions seldom cause troublesome bleeding, and should be treated as is customary. If they do not respond to local treatment, it is usually because of some local irritation that has not been removed, as a malformation, or an acrid exco-riating endometrial discharge, or to commencing malignant disease. Microscopic examination will reveal this, and the knife or the cautery do the rest.

Neoplasms that cause free bleeding of the uterus at this time of life are usually either cancers, fibromata, or polypi. Removal is the proper cure in each instance, the last named being generally the readiest removed. Fibromata may be easy, difficult, or impossible of removal, according as they are small or large, or favorably or unfavorably located. Sometimes they involve so much of the uterus that the entire organ must be removed, and this is often good practice, though much depends upon the condition of the patient and the extent of adhesions that may have formed. A cancer requires removal as soon as possible after recognition. No time should be lost. We may be upon the verge of discovering a medicinal or a serum cure, but it is safest to depend upon the knife for early removal, and upon other agents to prevent recurrences or its spread from parts that may possibly have been left behind.

The arrest of bleeding by electricity is often possible, a combination galvano-faradic current being best for this pur-

pose, the anode being placed within the uterus, while the induced current should be from a coil of coarse wire. The charge should be a liberal one, and must be continued until effective, unless no result follows five minutes' trial. The current may also be employed for the removal of neoplasms, either by cautery or electrolysis. If the tumor is large, it is best removed by the galvano-cautery, after which its bed may receive electrolytic treatment.

MAMMARY DISTURBANCES.

The mammary glands, so sympathetically related to the uterus from puberty throughout the child-bearing period, are also united by the same intangible means to the troubles of the generative tract during the menopause. The relation is not always evident any more than it is at the other periods of life, but this gland is sometimes a remarkably sympathetic index of uterine disturbance. Just why this relation should be so manifest in some instances and not at all in others, is not evident. It is the business of those glands to atrophy during the menopause. That is normal, it is physiologic, and we accept it as a matter of course, though it is as difficult of explanation as is the opposite condition, when one or both enlarge, become painful, and either end in resolution or proceed to inflammation, suppuration, and abscess, or grow a neoplasm, often a cancer. A discussion of the how and why is merest speculation and of no practical value at present, though fascinatingly interesting to a speculative mind. The question is, what to do for these conditions.

Here again must be repeated the oft-given reply, "treat these conditions the same as you would at any other time of life." Support the breast and rest the patient, in threatened mastitis, open up pus collections and see that they are drained freely. If growths appear, watch them closely; see them at least once a week. If growth is rapid and painful, especially if the axillary glands become involved, the entire breast and all the axillary glands of the same side should be removed. If there is enlargement of the subclavian glands, they too must be extirpated. Ulcers of the skin covering the mammae must be viewed with suspicion, for they are either malignant or likely to become so. Scrapings from them should be microscopically examined. Every effort should be made to heal the lesion. As soon as the microscope shows it to be malignant, it must be excised, and if the gland structure is at all involved, it must all come out together with the axillary glands. This is the patient's only safety, and neglect of it is reprehensible.

THE SKIN.

Morbid or peculiar action of the skin is most evident during the menopause, principally in two ways, namely, flushes and sweatings. Yet these are really two different manifestations of circulatory disturbance. And it is natural enough, too, that the extensive area of cutaneous nerve-endings should share in the common reflex or sympathetic perturbations, so-called, so prevalent at this period. Then there are also various eruptions as well as sensory nerve-aberrations, while circulation disturbances under the skin may cause edema, especially in the parts furthest removed from the heart, notably the ankles. But by these disturbances I do not intend to include all cases of this kind occurring during the change of life, but only such as may fairly be credited with being due to the peculiar condition at this time, and dependent upon it.

FLUSHES.

Flushes are at all times unpleasant, at times embarrassing, and sometimes even very distressing; unpleasant, because annoying and out of place, embarrassing when one believes them to be misinterpreted, and distressing in varying degrees according to the extent of associated symptoms, such as weakness, vertigo, tendency to faint, confusion of mind, or a sensitive consciousness that the cause of their existence is surmised.

Flushes may end in relief by perspiration, or they may not, in which event they are known as dry flushes. They may affect different parts of the body, and they usually cause a sensation of heat, though they are occasionally accompanied by a cool clammy surface and a feeling of chilliness. But flushes are usually felt as a local warmth. Sometimes the entire body feels the glow. The patient then complains of the excessive warmth of a room which is not at all uncomfortable to others, or may actually be too cool. They want windows opened, or they stand in an open doorway to cool off, while they incessantly use the fan in places where they cannot as readily get the cooler outer air at pleasure, as in theatres, churches, department stores, and other similar places. When the extremities are affected, these are exposed to the air at every opportunity where they would otherwise remain covered. Sweating often gives relief, but this is absent in many instances. During these periods women are usually in a sensitive nervous state, in a condition of general hyperesthesia,

They are more readily excited, irritated, or alarmed. They are often querulous. Excitation is apt to favor flushing, and should be avoided.

In the treatment of this condition, the general condition of the patient must be considered, and everything possible should be done to insure as normal general health as can be secured. Excitability should be reduced by the use of the bromides, and feeble women should get the additional benefit of the use of *nux vomica* or strychnine. Some cases, characterized by a constant low arterial tension, are decidedly benefited by *strophanthin*. I have had only slight experience in the use of ovarian extract in these cases, but it seems to be useful, in fact was in two of my cases after other remedies had failed after a liberal trial.

SWEATINGS.

Sweating may be free, but within bounds, or it may be excessive, so much so, at times, as to be very weakening. Many of these sweats, especially the profuse ones, are critical, so-called, in the sense that they mark the breaking up or disappearance of precedent symptoms of an objectionable character. Thus, for instance, severe headaches, or stupidity, or ungovernable tendency to sleep, will often disappear shortly after sweating sets in. It is fair to assume that this relief is caused by the elimination of some poisonous material, and under these conditions the sweating should be encouraged whenever these precedent symptoms first appear. At other times, the excessive transudation from the skin seems to subserve no useful purpose, but wets the clothing, thus increasing the liability to "colds," and causes in itself a feeling of relaxation and weakness severe enough to call for medical treatment.

Women of a sthenic type, full-blooded or sanguine, may sweat profusely from generally increased functional activity in which the skin assumes its part, while the asthenic, anemic, and debilitated patient may literally be sweating out her life's blood from sheer relaxation increased by each successive cutaneous drain. The treatment of one must be essentially different from the other.

Sweating that is "critical" should be encouraged, or should, at least, not be diminished without good reason. Sometimes it is associated with suppression of renal function. It is, therefore, proper to examine the urine in these cases, not only with a view of detecting possible renal disease, but also to determine the total quantity of liquids and solids passed within a given time, so that it may be known whether the un-

usual cutaneous transudation is compensatory or not. It is thus possible to blame the skin, to consider its action perverted, when it is really gallantly assuming the duties of other organs that are derelict. Stimulation of renal activity thus often cures excessive sweating. When, however, these organs are really incapable of doing their proper share of eliminative work, it is well to occasionally thrust some of it upon the bowel, thus temporarily relieving the skin. For this purpose I use either magnesium sulphate (Epsom salts) before breakfast, or elaterium (Clutterbuck's) in $\frac{1}{4}$ -grain doses every 1 or 2 hours until effective, not more than two or three doses being usually required.

Moderate daily exercise, especially in the open air, cold sponge bathing, or tepid sponge baths in the very asthenic, so tone up the nervous system that any sweating due to relaxation soon disappears. From 5 to 20 drops of the tincture of belladonna will often stop a profuse sweat. The same is true of oft-repeated small doses of pilocarpine, say 1-100 gr. every hour or half-hour, to be taken later on as required. Then picrotoxine will have a like satisfactory effect in other cases, it being given during the same intervals in doses of about 1-150 gr. ; and the tincture of rhus tox. may be substituted for it in 5 or 10 drop doses.

But it must never be forgotten that these affections are primarily due to the disturbance of another set of organs, and that all special treatment should be supplemented by some effort to mitigate the original exciting cause, the cessation of function of the intra-pelvic genitalia.

HEPATIC DISTURBANCES.

Bilious attacks, jaundice, and the many other disturbances credited to the liver, together with the blues (hypochondriacal feelings) are sufficiently common at the menopause to merit special mention. This gland is so important, and its functions so varied, that it would be surprising if it did not occasionally feel the influence of the general perturbation of this period. That hepatic disturbances often cause hypochondriasis is as certain in my mind as the same effect of inflammation of the urinary bladder. Why derangement of these organs should cause such depression of spirits is by no means so clear as is the fact that they do. Deficient or perverted action of the liver entail alteration in the normal character of the blood, and thus, necessarily, in the nourishment of the tissues. Perversion of the biliary function is certain to cause modification of enteric function, and this in turn affects the general system.

Congestion of the liver retards the portal circulation, thus giving rise to passive congestion of the stomach, gut, spleen, and pancreas, with resulting modification in primary digestion and assimilation, together with all their unknown entailments.

A sallow complexion, low spirits, and constipation readily yield to 1-10 gr. doses of calomel every hour during one day, or to several 5 gr. doses of cascara sagrada. If there is any associated loss of appetite, it is best to give a combination of hydrochloric and phosphoric acid with a simple bitter, say quassia. I would give from 5 to 10 drops each of the acid, and about half an ounce of the infusion of quassia, though the bitter is best given from one of the quassia cups sold in the drug stores.

The mere fact that there is no constipation is no reason why either calomel or cascara sagrada should not be given. I use them for their effect upon the liver whether constipation coexist or not, and I have often given them in the presence of a diarrhea, only to find that the enteric discharge ceased upon the restoration of hepatic activity.

URINARY DEPOSITS.

The many functional disturbances incident to this period are often evidenced by changes in the urine. They have no other significance than that they indicate states of the general health that may or may not be due to the menopause. Some claims have been made of the occasional occurrence of characteristic deposits at this time, but I have never seen any, and very much doubt their existence. Phosphatic deposits have, in my experience, been accompanied by the most obstinate symptoms, either of local renal and ureteral pain and soreness, or of general lithemic and rheumatic symptoms, all frequently refusing to yield to anything except temporarily palliative treatment. Oxaluria sometimes causes smarting and burning micturition. Diuretics, of which an abundance of clear water is probably the best, are sometimes sufficient to cause a disappearance of the trouble. The usual treatment, together with such other as may be required to relieve local intra-pelvic or general disease, is enough in these cases. In other words, there is no special urinary deposit at this period of life peculiar to the change.

Chapter IV.

DISEASES OF THE MENOPAUSE.

In considering the diseases of the menopause, it is well to bear in mind that this period of life predisposes to no special diseases other than those which are otherwise to be looked for at the same age in men as well as women, with the possible exception of a few disorders of their special genital apparatus. The one factor not to be forgotten is the irritable state of the nervous system at this time, for from it is reflected much of the symptomatology that we are called upon to relieve. Slight causes are magnified into unusual importance at this time much in the same way as an insignificant incident will arouse an irritated individual that would pass unnoticed in a calmer state. The remembrance of this single fact is the key to both the diagnosis and the treatment of the various ailments complicating the change of life. Considered anatomically, therefore, the nervous system stands first upon the list, because the most frequently involved and so often implicating other parts. Then follow disturbances of circulation, of the digestive tract, the viscera, and of the pelvic contents. But I have deemed it best to group the nervous disorders of this period that I mention into a special chapter because of their importance.

DISEASES OF THE GENITAL APPARATUS.

Of all the affections peculiar to the menopause, none are more natural than those affecting the genital and reproductive organs. The alteration in function of so important an organ as the ovary must, one would suppose, have a decided effect upon the uterus and its connections, and even the external genitals and adjacent intra-pelvic structures. To a large extent this is so. Women who have not complained of pelvic trouble before may do so at the menopause. The derangements may be slight or severe. The fact that ovarian extracts seem helpful in the alleviation of some of these affections lends color to the belief that the ovary secretes some important constituent during its period of activity (that is, from puberty to the menopause) the absence of which often entails many of the various disturbances incident to this period. Of the many ailments of the pelvic organs, some of which have already been considered,

are, first of all, leucorrhea, and, following this, uterine bleedings, affections of the vagina and external genitalia, urinary deposits, and mammary gland disturbances, and, last of all, neoplasms, both benign and malignant.

LEUCORRHEA.

Leucorrhea is quite a common occurrence at the menopause. It may be a "critical" discharge, so-called, or it may be due to congestive trouble depending upon local irritations, and I am of the opinion that the future will continue to increase the latter class at the expense of the former. The present trend of thought inclines to the view that all, or nearly all, vaginal muco-purulent discharges are of microbial origin—that it is Nature's effort to flush away deleterious micro-organisms that are gaining a foothold. If this theory is correct, the proper treatment of leucorrhea would be to aid Nature in the production of this outflow from the mucous surface, and to disinfect it at frequent intervals. Of course, it is fair to assume that the altered mucus poured out has in itself some germicidal qualities, and it may be surmised that the addition of extrinsic antiseptic agents may nullify them; in fact, that the antiseptic and muco-pus may neutralize each other to the advantage of the micro-organisms; but experience has so often shown the good effects of antiseptic applications that the view is untenable, at least as a universally applicable rule. It, therefore, seems a well-established fact that antiseptic vaginal douches and tampons are benefic in leucorrhea. Besides this there is the advantage derivable from the use of agents that cause an increased flow of mucus, such, for instance, as the boro-glyceride tampon, the gelatine vaginal suppositories, and the vaginal tablets used for this purpose. They all serve to flush the vagina from the interior of its mucous lining, thus carrying away germs, and exerting whatever antiseptic action may enter in the exudate, at the same time that the douche acts from without, and carries the *materies morbi* to the outer world. Besides this effect, the free exudation of mucus unloads congested bloodvessels, and thus lessens inflammatory action, guards against increased trouble, and hastens cure.

Many leucorrhœas are of mechanic origin. Thus an enlarged and congested uterus, sagging in the pelvis, increases the bends in its afferent and efferent bloodvessels. The result is passive congestion and increased mucus transudation, for the arteries, with their vigorous force behind them, overcome the obstruction of kinked bloodvessels, whereas the veins, with their much lesser force before or behind them, remain over-

distended. Unless this venous tension is relieved, the trouble is sure to increase. It is just here that the vaginal depletories are so useful. A single boroglyceride tampon often gives prompt relief lasting for many hours. Warm douches, long continued, do the same by stimulating exosmosis through the mucous membrane.

Long-continued existence of leucorrhœa from any cause induces irreparable structural changes in the vaginal mucosa as similar conditions equally long continued would do elsewhere. This condition cannot be fully recovered from. Long-continued treatment is gratefully palliative and does much to ultimately improve the condition. If poor health coexists, this must also be improved. Such general tonics must then be given as are indicated by the state of the patient and the conditions under which she lives. Astringent douches should not be used as a regular treatment, but may be needed for their temporary effect. Upon rarer occasions the entire vaginal mucosa is in a relaxed condition which astringents will restore to a healthy tone, but even then long-continued hot douching is usually more useful.

Some leucorrhœas are due to abrasions of the cervix without involvement of the vaginal mucosa. These cases usually yield to a thorough antiseptic cleansing followed by a local astringent and stimulating application, such, for instance, as a 10-per-cent. solution of the sulphate of copper or of nitrate of silver, the exact strength, however, depending upon the sensitiveness of the affected parts and the reacting qualities of the patient. If there is much local congestion, the boroglyceride tampon, or one of its equally good substitutes, may be used. The direct application of pure tincture of iodine sometimes cures within a week.

The fact should not be forgotten that leucorrhœa is a symptom of some other underlying disturbance, the cure or removal of which ends the flow of muco-pus. These causes may be microbial, may be due to alterations of the mucosa, or may be caused by neuropathic, congestive, inflammatory, or mechanic disturbances.

DISEASES OF THE VAGINA AND GENITALIA.

It often happens that the vagina or external genitals become affected during the change of life, and more especially do I refer to conditions that seem to be caused by the change. An uncommon trouble is simple vaginitis, and when it does exist it seems always to be due to a local exciting cause. If not of too long standing, it yields readily to proper treatment.

I usually prefer creolin or lysol douches night and morning, together with the boro-glyceride tampon or vaginal cone daily or on alternate days. Follicular, eczematous, and herpetic troubles often affect the vulva. The remedies are those commonly employed for this purpose, namely, antiseptic and soothing, and may consist of washes and ointments, the latter being preferable because of their adhering qualities, as well as the advisability of keeping water away from vesicular eruptions. Carbolyzed vaseline is usually efficient as antiseptic and analgesic.

Pruritis of the vulva is a very annoying complication, and may be of nervous origin, or may be due to local irritation, such, for instance, as irritating discharges or pediculi. A good creolin or lysol wash usually suffices for all kinds of itching due to local irritation, but general medication is required in that of nervous origin. I like the use of nerve-end paralyzers like aconitine. The fine coil faradic current applied between the spine and vulva is also efficient. The general health must be built up, and all possible causes of general reflex irritation must be looked for and eliminated.

CONSTIPATION.

It often happens that there is constipation instead of diarrhea. In many of these cases, though the stools are well-formed and of normal consistence, the infrequent voiding of feces seems mainly due to a lack of sensitiveness of the bowel, by which it makes no effort, direct or reflex, to rid itself of its contents until there is a large accumulation. The sensitiveness of the gut to the presence of objectionable contents seems dulled. That this may be due to some nervous perversion dependent upon the intra-pelvic change of function, and accompanying general disturbance, is very likely, but its exact nature is not understood. It may also be caused by the absence from the feces of some irritant material usually there, but which some of the emunctories discharging into the enteric tract fail to produce. But I am not acquainted with any studies upon this subject, and have not had the opportunity to make any myself. But the symptoms resulting from constipation at this time are worse than they are at other periods of life, for self-evident reasons. The condition should be relieved, and its recurrence for any protracted period guarded against. There can be no doubt upon this score. Retention of effete material is always bad.

How to overcome the constipation depends upon its nature. If due to a dulled sensibility of the bowel, I prefer the use of aloes for the reason that this drug increases the circu-

lation in the lower bowel and rectum, thus causing a softening of the feces and an increased sensitiveness of the mucous membrane, for, as is well-established, increased circulation causes increased functional activity and nerve-sensitiveness. When constipation is due to deficient expulsive power, nuxvomica or strychnin are indicated. Sometimes a mercurial purge has a soothing effect, besides being very efficient, especially in hepatic disturbances, when cascara sagrada may also be used with good effect. Many effective combinations are upon the market under the name of anti-constipation pills that answer admirably in constipations due to mixed causes, but my preference is for single remedies whenever possible. Sometimes a mere change of diet, with moderate exercise in the open air, together with a regular time to go to stool, is adequate without the use of drugs.

RECTAL DISEASE.

There are certain affections of the rectum common enough at the menopause that give rise to many misleading symptoms. It is exceptional for many—too many—practitioners to entirely neglect rectal examination. Rectal affections are very apt to cause several aches that are readily attributed to uterine origin, even though no disease of this organ can be detected. Nor is it always necessary to examine through the anus to diagnose rectal trouble. Congestion, inflammation, or ulceration of the rectum, especially of its lower part, is often easily determined by vaginal touch. The finger in the vagina readily follows even the empty rectum from the top of the perineal body against the coccyx and sacrum as far up as the reach extends. Tenderness or soreness is at once evident upon the exertion of pressure. An ulcer may often be easily outlined, especially when there is an indurated margin. Growths, such as polypi and cancers, are detected with the utmost ease. Fecal masses have their peculiar doughy feel, and when hard, are freely moveable. Congestion, inflammation, and ulceration may, any or all, be due to pressure from an enlarged and misplaced uterus, or from reflex trophic disturbances. Besides these are the many other causes of rectal disease that exist outside the menopause.

The treatment of these conditions is local and general. The local applications may be made directly through a speculum or by enema, as occasion may demand, while the general treatment is the same as I have repeatedly outlined for disturbances at this period. The most essential thing is the dis-

covery of the rectal condition, and I have mentioned it more because it is so often overlooked than to suggest any special mode of treatment.

PILES.

Piles, as is well known, may be a source of substitutive (vicarious) bleeding. When this is undoubtedly the case and they give trouble only periodically, and by this I mean at what would have been the regular menstrual period, they had better be left alone. If, however, they bleed continually and give rise to the usual distress, it is best to remove them by whatever method the individual operator and the peculiar condition of the patient seem to make most desirable. I usually prefer the tying method, taking the precaution to cut through the skin and mucous membrane so that none of it shall be caught by the ligature. After ligation, I cut off the bulk of the pile. These two conditions give the patient much pain and the surgeon no little annoyance.

SKIN ERUPTIONS.

Many forms of skin eruptions are encountered that are undoubtedly in some way connected with the menopause. The connection between the two troubles cannot, however, be traced. These occurrences are relatively rare, but they exist. Of the close relationship between some of these manifestations and the condition of the pelvic contents there can be no possible doubt, the skin lesion often being an accurate index of the progress of existing pelvic trouble. We often find them seesawing, one getting worse while the other improves. The skin affection may then be said to be "critical" or complementary, while in other instances it is reflex or dependent, the eruption disappearing as the pelvic trouble improves. All these cases must be studied individually, which requires long and patient observation. They all require the services of the gynecologist rather than of the dermatologist.

Cutaneous affections with which the patient may have been afflicted years before are apt to recur during the menopause. Many of these yield to no treatment, and finally disappear of their own accord.

NEOPLASMS.

One would naturally expect to find troublesome neoplasms connected with the uterus during the menopause, for the simple reason that it occurs at a period of life when such growths, especially of a malignant type, are apt to make their appearance,

as well as because of the retrograde changes going on in the organ at the time, thus offering less resistance to the progress of the new cells, whose influence soon predominates. Morbid growths are usually aided by diminished local functional activity, though they are held in check by general waning of the functions. Thus, the menopause in a relatively vigorous woman is more favorable to the local growth than is the general asthenia of senility, when neoplasms also grow sluggishly.

The first thing to determine is whether a tumor is malignant or benign, and whether dangerous or not if benign, for a growth, such as a polypus, which is not malignant in itself, may prove dangerous because of the possibility of its causing fatal bleeding. It is safe to say that uterine growths at the menopause require removal as a rule, and that the change of life in itself is in no way a bar to surgical interference. In looking over the medical literature of the past, and some of it quite recent, one is soon impressed with the fact that ignorance, mysticism, and fear go hand in hand. The interior of the uterus was, not so many years ago, as sacred a chamber as was the peritoneal cavity, entrance to which meant untold woe or death. We were timid, and complacently claimed credit for conservatism. Now, nearly all parts except the minuter portions, such as the respiratory center of the medulla, are amenable to tangible interference, and it has become a well-known, and generally-accepted, fact that very much of the danger of surgical interference is due to late operation. If direct intervention is to be resorted to, it should be done as early as its necessity is decided upon. That is the patient's greatest safety, and in no instance is this truer than it is in the removal of uterine growths at the change of life.

Fibromata, if internal or interstitial, are safest, quickest, and best removed by the galvano-cautery, as so well done by Dr. John Byrne, of Brooklyn. Subperitoneal growths may be left alone unless they grow quickly, or become too large and cause much trouble. The proper method then is the use of the knife through the belly-wall. If this variety is found associated with interstitial growth, it is often best to remove the entire uterus and all its attached evils.

It is a mistake to assure a woman with a fibroid at or near the menopause, that because the uterus atrophies at this time, it will carry with it a coincident diminution in the size of the growth. Fibroids happen more often to be the controlling factor at this time. They cause an increased flow of blood, sometimes even intermediate flowing, and prolong menstruation for many months or years. Besides this, they often

increase their growth at this period. Operation should not be delayed if there is a tendency to degeneration of the growth in a direction likely to prove fatal. Valuable time must not be lost waiting. Age is no objection to operation. Even entire removal of the uterus and its adnexa, if done right, and before too many adhesions and complications have occurred, should not show a greater mortality than 5 per cent. Fatalities are usually due to hesitation and waiting.

Polypi are preferably removed with the galvano-cautery snare, after which the remaining stump or raw surface is seared with the hot loop. Temporizing is inexcusable. They should come out.

Cancers require early and radical removal. If the knife is used, it should be followed by the galvano-cautery and electrolysis to insure the destruction of the possibly-remaining cancer elements, whatever they may be. I prefer the galvano-cautery in all operative procedures rather than the knife, if healing is to be by granulation. It is aseptic, hemostatic, and safe. Operations should be radical. There must not be the slightest hesitation, especially at this time of life, to remove the uterus and its appendages if there is any doubt of otherwise being able to remove all of the growth. If even so radical a procedure is bound to leave behind some affected tissue, it is a nice question to decide whether the patient had better be left to die quietly without interference or whether the growth should be removed. For my part, I think the question should be decided, at least in part, by the patient or her nearest relatives or friends, my own inclination being to operate if the general condition of the patient is still favorable. Everything should be removed by the knife or galvano-cautery or both that admits of it, while the raw surface should be treated by electrolysis and searing. When a remaining surface is deeply affected, deep electrolytic action is secured by means of needles, while the shallower parts require a surface electrode. This gives the patient an excellent chance for cure if she has the strength to withstand the shock of the operation and the subsequent strain of the healing process. If it seems that she is not equal to the task, the operation should only be done upon the urgent request of those having authority to decide.

Chapter V.

DISEASES OF THE NERVOUS SYSTEM.

The diseases of the nervous system may be divided into those of the brain, cord, and motor, sensory, and trophic nerves, and their areas of distribution. Some of these have already been considered under other special heads, and need not be repeated now. Many statistics have been gathered to show the relative frequency of the various ailments incident to the menopause, but I do not repeat them in these pages, being of no special practical value, in fact, being purely academic in importance. The real thing to know is how to recognize these different conditions, and how best to treat them. A list of these, by no means complete, follows.

IN GENERAL, IN RE THE NERVOUS SYSTEM.

The one essential thing to bear in mind in the analysis or treatment of the nervous phenomena of the menopause, is the excessively heightened sensitiveness of the nervous system to reflex disturbances. There are shifting fields of numbness, of pricking, of various kinds of pain, often changing in character; there are peculiar sensations in various parts of the body; there are occasional delusions and hallucinations; a slight rise of temperature may readily follow a trivial cause, and be accompanied by decided flightiness; a whole panorama of symptoms may come and go, continually changing, or the same symptoms may play will-o'-the-wisp over the parts of the body with which it may be able to identify itself; and yet we cannot take these manifestations seriously. These vagaries, alike of symptoms and their location, are characteristic of a continued irritation that it should be our effort to remove rather than making any serious attempt to cure some obscure malady of the nervous system. But I do not mean to say that serious diseases of the nervous system should not be looked for, for they, too, often exist. But I want to lay stress upon the prevalence of the vagary element in nervous reflexes of utero-ovarian origin at the change of life, and to emphasize the fact that the symptoms do not specially require treatment so much as the exciting trouble in the genital organs.

Finally, I desire to add again, that independent diseases

of the nervous system at this period are apt to have their normal symptoms much aggravated, though it also happens, at times, that they are diminished, but the rule is that they are exaggerated.

IRRITABILITY (EXAGGERATED).

As I have already stated, a woman at the menopause is usually in a hyper-sensitive state, but this may become so excessive as to be amazingly apparent upon every slight occasion. As she nears this stage she requires a physician's care. Then women are often restless, get very fidgety, are fault-finding, are never satisfied, and are frequently even annoyed at having their expressed wishes gratified. Nothing is as satisfactory to them as to have a genuine cause of complaint, and then be permitted to indulge it without interference. I have often counselled relatives to permit a few such minor causes to exist for the special exercise of this propensity, and to take meanly-said things with composure and seemingly cheerful resignation, but not too seriously. These patients require such an outlet for exuberant nervous energy. It is simply the irritable nervous system scolding itself. The patients often realize this, and are in turn annoyed at being taken too literally. Thus Mrs. A. scolds B., not so much because she is angry or dissatisfied with him as because he has afforded her an excuse to let out some pent-up ire, gall, spleen, or by whatever colloquial designation this tempestuousness may be known. The relief is to her irritability what the sponge-bath is to the fever patient; it is like the escape-valve on an engine to avoid overpressure; and it is a better mode of relief than the incessant use of medicaments. If medicines must be used, there is nothing better than the bromide of potassium in sufficient amount to be effective. A beginning may be made with 10 grs. every two or three hours, to be continued, after it is effective, as occasion demands. The usual hygienic and dietetic precautions should not be omitted. Frequent bathing in water of agreeable temperature is relaxing or soothing to the nervous tension. The advantages of suitable games, especially out-of-doors, must not be overlooked, such, for instance, as croquet in the open air, and cards within doors. If these women can be kept busy at congenial work or pastime, they are more benefited than they generally can be by medication.

EXCESSIVE SLEEPINESS.

We often meet with individuals who are like Dickens' Sleeping Joe. They are ever sleepy, and can get into the land

of Nod in the twinkling of an eye. I knew of one woman who actually fell asleep during one of these drowsy visitations while shuffling cards. Just what the nature of the condition is, we do not know, and why it should occur so much at the menopause is inexplicable unless it be upon the ground that it is caused by auto-poisoning due to deficient elimination. It is so often accompanied by a large soft pulse, that I have thought it might be due to a gentle vascular compression or squeezing of the brain, but this mechanic explanation seems to be negatived by the very numerous instances of a full soft pulse without a suspicion of unusual sleepiness. In some, yielding to the desire for a few minutes (ten to twenty) refreshes them, and the fit passes off, but in others this is not so, and many awake in the morning from what has been a night of lethargic slumber, feeling as bad or worse than when they retired.

What to do in these cases is most often a puzzle. Some do well on 10 drops of the tincture of belladonna every five or six hours, and others do much better on $2\frac{1}{2}$ to 5 grains of Dover's powder night and morning, or the same amount *per diem* in smaller doses at shorter intervals. These drugs are to be used in small enough amounts to get the stimulating effect upon the mind without the stupefying after-effect, and the exact amount can only be determined in each case by actual experience. Cold douching, bathing, or washing of the head is often of temporary use, but it is fallacious to look to transient effects of this kind, however long continued or persistently applied, for permanent results. The only rational and certain cure of the trouble must come from a rectification of the condition of the system that causes it. I have for some time been convinced that it is an auto-intoxication, and have frequently relieved it by inducing normal renal or enteric elimination, which it is much better to have too free at this period of life than even a little sluggish.

INSOMNIA.

Very troublesome is the opposite condition of the one just considered. Pitiful indeed is the suffering of the woman at this period who is bereft of the temporary oblivion and the refreshing effects of sleep. Its persistence is generally the cause of much correlated suffering. Thus headache, anorexia, loss in flesh and of color, exhaustion, irritableness, and often insanity, are its sequelæ or accompaniments. Sometimes these patients get far enough toward sleep to have disagreeable dreams, sometimes becoming so horrible as to make wakefulness a relief by comparison. The usual drugs employed for

the relief of this condition are efficient, but are objectionable, except as giving occasional relief, for the reason that they tend to engender a drug habit. This is because they do not cure—they do not remove the cause. It is much better to depend upon other soothing and sleep-inducing measures. Crocheting, knitting, or needle-work and embroidery are serviceable in a proportion of cases. In others, suitable reading, that is, of a quiet monotonous kind, has the desired effect. Mathematic work, such as adding up figures, or calling out or copying numbers, is useful. Many a woman has her desire for sleep banished by the preparations for retiring, which are often signally relieved by going to sleep at night when and where the desire possesses them, upon a sofa, in an armchair, or while lying dressed upon a bed. This is better than medication, though a placebo does not come amiss with many people. Many are relieved by a warm bath, rather prolonged, by means of which the arterial tension is lowered, much elimination is effected, and general relaxation is induced. In others, gentle massage is the best remedy, or this may be followed by a cold or tepid sponge-bath, and subsequent friction with a coarse towel. Sthenic cases require the more active treatment. When in doubt, the various methods may be tried until the right one has been found. This plan also satisfies the patient that something is being done for her.

HEADACHES.

Pain in some part of the head is a very common symptom of the menopause. Its cause is often impossible to determine, but should always be ascertained if it can be done. When due to purely uterine trouble, it is usually upon the vertex, and is either a pressure or a tension sensation, only at times accompanied by nausea, and rarely by emesis. It may also be bitemporal or occipital. At times a painful streak seems to connect the head pain with another in the sacrum or one of the ovarian regions, or they may be all connected. The pain may begin below, and then either shoot up suddenly to the head, or mount gradually. I do not recall having noticed the pain descend, but do not deny that it may or does do so.

If these headaches are associated with gastric or other extra-pelvic visceral disturbances, it is well to rectify them in the hope that the head symptoms may abate or disappear. Many of these cases yield to aconitine, or even to the tincture of aconite, the latter being given in 1-drop doses at hourly or half-hourly intervals until effective. If elimination is deficient, 5-drop doses of the wine of colchicum often gives surprising

relief. But the state of the emunctories, and the force of the heart and pulse-beat, must be the guides in the use of drugs in headaches of the menopause. Aconite may be used for the two-fold purpose of lessening the force of the heart-beat and a high arterial tension, and to obtund the sensibilities of the terminal nerve-fibers. As a mere analgesic with rapid action, the best remedies come from the coal-tar group, and I favor acetanilide, of which I use 5 grains in tablet form, combined with a single grain of bicarbonate of sodium to insure its more rapid solution and absorption. If a heart tonic is needed at the same time, caffeine may be added, or a suitable dose of wine or whiskey may be used instead.

Severe throbbing headaches are often quickly relieved by *veratrum viride*, of which 5 or 10 drops of the fluid extract may be given at once, and repeated at hourly intervals until effective, and continued thereafter as needed. If the pain is due to excitement, there is nothing better than potassium bromide, of which half a drachm may be given in a goblet of water. In some of these cases 10 or 15 drops of the tincture of opium has a splendid effect, usually in those having large and mobile pupils, but it had better be given masked, say with some peppermint added to disguise the taste and odor, with which many patients are familiar.

EPILEPSY.

Epilepsy is often exaggerated during the menopause, or it may appear at this time without having pre-existed. In some, it may have existed during puberty only. There is nothing strange in the reappearance, original appearance, or aggravation of this disease at this time so characteristically rich in nervous reflexes due to a greatly-increased excitability of the nervous system. Nor does it require any treatment differing from that employed at other periods of life, unless it be that more vigorous medication is required and likely to be followed by good results. If due, as is often the case, to ovarian congestion and irritation, *pulsatilla* will promptly modify the trouble if the fluid extract is given in 1-drop doses every one or two hours, and if it or the tincture is painted over the lower belly-wall upon the same side as the affected ovary. Better still is it to carry a mixture of aconite and *pulsatilla* to the ovary by electrical diffusion. A positive sponge electrode is wetted, and then saturated with a mixture of the two drugs in equal amounts. It is placed over the affected ovary while the kathode is held upon the back over the sacrum or sacro-iliac joint. As strong a current as can be comfortably borne is then

turned on, and permitted to flow for fifteen minutes. This is a very efficient method. It may be applied daily or as often as needed, my plan being to use it once or twice a day until longer intervals will do. The use of the current is followed by relief for a certain length of time after the first application, say one or two hours. The second gives relief for double this period, the third possibly double that given by the second, thus increasing the duration of relief in mathematic ratio with each succeeding application until it extends from one application to the other. It is then time to lengthen the interval between treatments, and they should not be discontinued until the relief following a single application continues several days. I find this always the most rapidly effective, as well as really the most economic, and, therefore, most satisfactory method of administering electricity for this kind of trouble, and painful conditions generally.

INSANITY.

That there is much mental perturbation during the menopause is a fact; that this period is relatively rich, if not the richest, in insanity, admits of no doubt; and that it is in itself the cause of considerable mental aberration cannot be successfully contradicted. We do know some of the material causes of insanity, but of the origin of many of the diseased mental states we know nothing, nor are we in position to even make good guesses. In insanities of the menopause, we are at a loss to explain their existence, and we actually know better what to do for them than we do how to account for them. For the want of a better explanation we are bound, if honest, to call them reflex, which means that the subject belongs to the large collection of the we-don't-understands.

In all these cases this one fact is prominent: that those agents which have a sedative effect upon the uterus lessen the symptoms of the aberrant mind. For the present, this must be the main guide in our therapeutics of the insanities of the menopause as it is for like conditions related to puberty, menstruation, gestation, the puerperium, and the lactation periods. That there is an intimate relation between the mind and the female genital organs, is amply proven; and that mental disease in those in whom this relation is so disturbed as to upset the mind, is responsive to sedatives of these organs, though not so when not thus associated, is the cardinal index to the proper treatment of these cases. Insanity of the menopause, therefore, requires, above all else, the use of those drugs which act as tonics and sedatives of the uterus and ovaries. Among

these may be named *cimicifuga*, *sumbul*, *viburnum*, *ponca*, *pulsatilla*, *gelsemium*. Electric sedation, static, faradic, or galvanic, is more important than is generally supposed. A careful examination of the genitalia had best precede all special medication. The discovery of any deviation from the normal should be viewed with suspicion as the possible cause of the mental trouble. I believe that while many of the local irritations are due to congestion, especially ovarian, others are due to anemia. I do think that the "senile" contraction of the ovaries at this time may be too rapid to permit of adjustment. A squeezed ovary, whether due to increased blood-supply within the tunica albuginea or rapid (cicatrical) contraction and consequent compression anemia, is apt to cause like trains of symptoms, and these are similar to corresponding influences affecting the testicles, but more pronounced in degree. The greater reflex influence of the ovaries is largely, if not altogether, explained by their being shut up in a bony cavity, and subject to all the variations of intra-abdominal pressure due to changes of position, muscular exertion, and the acts of defecation, coughing, laughing, crying, sneezing, vomiting. Were a tender testicle constantly subjected to like variations of pressure, sudden or gradual, it would have equally as wide a cycle of dependent phenomena. An orchitis would be much longer getting well if surrounded by the same disadvantages that encompass the ovary.

HYPOCHONDRIA.

Hypochondria is merely an exaggerated attack of the "blues." It can only be confounded with incipient insanity and melancholia. It is distinguished from the former by its long duration, for the prodromal period preceding an insanity (in such cases) last but two or three weeks, while it is differentiated from the latter by the absence of post-cervical or occipital ache, insomnia, and the facies of melancholia, for an explanation of which the reader is referred to the subject of melancholia. Besides this, the hypochondriac seeks relief, while the melancholiac shuns it—to the former it is the bane of her life that she would rid herself of, while to the latter her condition is so fixed in her mind as being unrelievable, that she eventually thinks of but one mode of escape—suicide. The hypochondriac persists in telling her woes, and it really seems as if it is the only enjoyment she has. She tells all her sensations over and over, again and again, all growing larger and more numerous with each repetition, until she leads herself into the deluded belief that she has troubles that do not exist.

There is no limit to what she may think is her trouble. Her complaints are not necessarily limited to her pelvic viscera, though this is the usual focus of her mental perturbations during the menopause. All this is aggravated by the "advice" and reminiscences of her lady friends and acquaintances. It is needless to go more into detail as to symptoms. We all know her, and we do not care to see her often though she pays well. She can be gay with all her trouble, indeed, often revels in it, seems to enjoy it.

What to do for these patients is a difficult problem. Medicines are of doubtful utility, and at best only evanescent in effect. If they relieve one set of symptoms, others soon appear. The best results follow obtaining the confidence and good-will of the patient, and then assuring her upon each visit that she is improving. This is merely mental suggestion, a waking hypnotism one might say, and it is best always accompanied by some medication. Mental diversion is also a good mode of cure. Many get well when kept too busy to think much about their condition. To those who have the means, a change of scene is of great advantage, and it does the most good in the proportion in which the true reason for the change is withheld from them. When the trouble is of long standing, they become very suspicious and difficult to outwit. But this is not so much so because of the duration of the affection in itself as it is because of the varied experience it has given them in treatments that deceived them without curing them.

Medicinally, I know of no better treatment than keeping the bowels well open, insuring good sleep, and nourishing feeding, together with remedies that will lessen uterine reflexes, such as *cimicifuga*, *viburnum*, *sumbul*, and *pulsatilla*. To these may be added moderate bicycle riding when not otherwise contra-indicated.

MELANCHOLIA.

Melancholia is a disease of the mind in which the individual is dominated by extreme melancholy, together with severe mental distress, diminished reflexes, and often a tendency to suicide. It has three highly distinguishing characteristics, first enunciated by the late Landon Carter Gray, of New York. They are the characteristic facies (a constant facial expression of the deepest melancholy), persistent insomnia, and post-cervical ache. The last symptom is specially Gray's, and consists in an ache or other pain, or even only a peculiar sensation at the nape of the neck, or over the occiput, sometimes extending up and forwards over the cranium as far as the brow,

or down the entire length of the spine. The coexistence of these three cardinal symptoms justifies the diagnosis of melancholia, and this is specially important because they are present very early in the disease.

It must not be forgotten that the melancholiac has suicidal tendencies, and that these may be very strong, but masked, in some of the mildest cases. Its latency should, therefore, always be borne in mind, and the family cautioned about it, so that its aggravation by scolding and faultfinding be guarded against. The sufferings of the melancholiac are painfully real, as many of them afterwards shudderingly attest at the partial recollection of what they endured. Fortunately for themselves, many do not recollect their past mental distress, or only partly do so.

The average duration of the disease is about nine months, but ranges all the way from several weeks to as many years. Many cases, especially if accompanied by stupidity, never get well. The treatment is medicinal, hygienic, and prophylactic. The main object of medicines is to brace up the depressed mind, and to relieve the intolerable insomnia. For the former there is no better remedy than pure opium, $\frac{1}{8}$ gr. of the aqueous extract being given one, two, or three times a day, as occasion may demand. The insomnia yields readily to chloral hydrate, 10 grains often sufficing at first, but they are very prone to form the chloral habit, on which account it is better not to use it if some other hypnotic can be found to do the work as well. The preparation put up by some of the leading manufacturing druggists for this purpose answers admirably, both for the relief of the insomnia and the restlessness that often exists. Each ounce contains 2 drams each of chloral hydrate and potassium bromide, and 1 grain each of the extracts of cannabis indica and hyoscyamus. The dose is from $\frac{1}{2}$ to 1 dram.

It is needless to add that the local pelvic troubles, if any exist, must be remedied. Besides this, uterine and ovarian tonics should be freely administered, as I stated in hypochondria. Nor must the mistake be made of supposing that the melancholia may be due entirely to pelvic disease or the cessation of menstruation. As I have already said, the menopause is a period of great nervous irritability, and this is often enough to force out, to bring to a head, as it were, trouble that has been latent for some time. It is, therefore, very essential to watch these cases after pelvic disease has disappeared. The mental condition should be treated just the same as if there was no coincident pelvic trouble. There is marked tendency to

relapse in melancholia, which is another reason for keeping these unfortunates under observation for some time even after they appear to be well. It is the worst kind of folly to neglect these cases under the mistaken idea that they are an incident of the menopause, and will right themselves when the change of life has been completed.

HYSTERIA.

The first requisite in the treatment of hysteria is to be sure of the diagnosis. The vagaries of the symptoms of the hysteric are well known, and a hysteric condition often accompanies organic disease or general functional disturbances, like neurasthenia. It is essentially a state of hyper-excitability of the nervous system combined with deficient power of control. These cases are emotional, readily excited, and yet unable to hold themselves in check, or exercise control through reasoning and will-power. A hysteric woman at the change of life is the ready victim of the suggestion of meddling friends, who unfailingly detail matter that is objectionable, and never think of the good they might do with recitals of instances that would encourage the patient.

The poor hysteric at this time of life scents danger from her condition; a slight headache becomes something tremendous; a little back, or belly, ache at once becomes excruciating; a slight leucorrhea indicates cancer, and the sympathy of her friends and relatives makes her a pitiable martyr, in her own estimation at least. She cannot be reasoned with. She must be attacked unawares, must be outwitted. Medication is of no use in allaying many of the symptoms that constitute her capital of complaint. She is often chagrined at their disappearances, but soon gains courage in the successful search for other ills that are diligently looked for, and gratefully nursed when discovered. It is balm to her soul to receive the sympathy of others, and she values and treasures her symptom complex for the sympathy it brings her. She is, at heart, honest, for she does not simulate anything that she does not have, but is given to unconscious exaggeration. New symptoms must be found if old ones disappear, for she does not invent them.

I am thus explicit in this matter because its clear recognition is the key to the successful treatment of the condition. The patient must be toned up, and the reflex excitability of her nervous system allayed at the same time that her mental control over herself is strengthened. This requires, first of all, the tactful management of the patient, and the obtaining of her

confidence. The way to spoil all is to treat her as if she were an impostor. She is not, and, as I have already said, she is essentially honest and well intentioned. These cases are readily hypnotized, and, when this is practicable, it forms one of the best methods of effecting a cure, notably if it persists after removal of all conditions that might serve as exciting causes. Among medicinal agents there is no special remedy that has any superior virtue. Bread pills or sugar pellets are often as efficient as the most powerful drugs. It is most necessary to impress the patient's mind, and this is best done by suggestion, either conscious or unconscious. Thus the woman who will discharge her attendant for having the temerity to tell her abruptly, upon his first visit, that her symptom complex is really but trivial, and most of it imaginary, will gratefully and pleasantly acknowledge a gradual remission of her symptoms if tactfully suggested at each succeeding visit. But it is almost always well to take the family into one's confidence, both so that one may not be misunderstood, and to enable them to endorse the physician's claim of steady improvement. Without this tactful handling of the patient, she soon becomes burdensome to the physician, and he, likewise, grows obnoxious to her. But the main reliance should be upon measures that appeal to the confidence of the patient, mental, psychic influences in whatever way produced, and the employment of any other agent that may be indicated for the removal of complicating conditions.

UNCONTROLLABLE (MORBID) IMPULSE.

No one, even if not learned in medicine, who has had experience with women at the menopause, can help having noticed that many are at this time subject to mental aberrations of many kinds and varying degrees. But to medical men especially is this a noticeable fact. The impossibility of governing themselves is often a predominant feature, ranging in degree from uncontrollable outbursts of ill-temper (often unjustifiable) to murder. The menopause causes its share of mental disturbance as well as do puberty, menstruation, gestation, parturition, and lactation. In a proportion of women at this time of life, the balance-wheel gets out of gear, they slip a cog in the machinery of the brain, and special irregular and unusual phenomena ensue, depending upon the part affected and the peculiarities of the patient. Environment also often modifies the manifestations. Certain conditions would favor homicide, while others would lead up to inexcusable scoldings. Incentives to irregular mental action must be present to a varying

extent. This fact also indicates how much can be done in a preventive way by a careful study of the patient, and the avoidance of all exciting causes of a manifestation of her peculiar symptoms.

The many directions in which this ungovernable state may manifest itself are as numerous as there are kinds of mental action, and these can hardly be computed. No matter what the nature or severity of the symptoms, the underlying cause is usually the same. There is a disadjustment of the mind and nervous system, due to the cessation or irregular action of a normal function. Just how the effects are produced we do not yet know. It is mere guesswork to say that it is due to reflex causes, or deficient or altered elimination. These explanations are speculative, and serve only to confuse.

Irritability, ungovernable temper, a tendency to make mischief, and inordinate suspicion are common traits at this time. They lead to painful incidents; many family and neighborhood quarrels are directly due to them. Women who have been sweet-tempered become vixenish, though the reverse sometimes also fortunately happens.

Drunkenness sometimes becomes a painful condition dependent upon a morbid state at the change of life. The desire is not so much for the taste of the stimulant as it is for its effect. The condition of the patient determines the craving for the stimulant, while her taste, natural or also morbid, elects the kind she is to use. Stimulants, for a time at least, steady an irregularly acting nervous system, soothe as well as brace up mental depression, and hence are employed despite subsequent unpleasant reactions. Because their effects gradually grow less, they are consumed in increasing amounts at progressively shorter intervals until the habit of drunkenness is established.

The tendency to steal comes over some women at the menopause. Some resist it with the greatest difficulty, while others must yield. There are numerous cases of shoplifting in our large city stores that are detected, but never prosecuted, because shown to be due to the menopause. Women then steal who have abundant means to buy. The things stolen are usually never put to use, and many are utterly worthless. The stealings are nearly always devoid of apparent motive. Thus, one woman I know of is the wife of a minister of the church, and must be kept in practical seclusion in her own house because of her inordinate tendency to purloin at every opportunity, even from her best friends.

A strong inclination to lie, and a ready yielding to it, is

another unpleasant state of the menopause, occurring much oftener than is generally supposed. Many not only lie, but become excessively querulous ; and inordinate lying, together with extreme querulousness, is a bad combination for others to get along with. Hence, these women are always at daggers' points with some one, and those about them are correspondingly miserable. Then, again, there is the suavely lying woman who appears to be the embodiment of truth and sincerity. She is an inordinate mischief-maker, and if not too glaring and pronounced in yielding to her weakness, she remains undiscovered for a long time. She is less disagreeable than her querulous sister, but much more dangerous. A few women of this kind, in a small community, may soon have an entire town at loggerheads. I mention this to show how important is the obligation of the physician to promptly detect these remissions and rectify them.

Suicidal impulses are commoner at the change of life than many believe. I really think that it is one of the commonest mental anomalies of the period, but it is not very often ungovernable. Many women at the change of life, especially when not financially easy or independent, and notably if incapacitated for work, feel themselves a burden. If by natural disposition, or because of adversely-changed disposition by the menopause, they are obnoxious to those about them, their own discomfort is correspondingly increased, and the suicidal tendency proportionately augmented, by their consequent unpleasant condition. Because a woman is too sensitive to admit having thoughts of suicide, it does not follow that she does not have them. We should, therefore, be ever on the alert for this tendency, especially when the condition of the patient is such as to sour her, and make life unpleasant. It is a noteworthy fact that suicide, especially in the large cities, is commonest in women at the changing period, say from 40 to 50 years of age.

Homicidal tendencies are not nearly so common at the change of life as is that to commit self-destruction. The latter is mostly suggested by surrounding unfavorable conditions, the former very rarely so. It is, therefore, safe to say that a homicidal tendency is almost absolutely positive evidence of decided insanity, and by this I mean a loss of the logical faculty. Homicides at this time, if due to the menopause, kill for the sake of killing, they cannot resist the impulse, while those contemplating suicide have usually what they believe to be an adequate cause. When a woman at the change of life admits a tendency to kill she must be constantly and carefully watched.

She should never be permitted to be alone, even for a moment, with others, especially children, under conditions that would help her to take life. It would not be safe to stand upon the edge of a wharf at night with such a woman, especially if one could not swim. Nor should she be permitted to have the sole care of children. If the tendency seems at all strong, the only safe course is confinement in an asylum. Dereliction in this regard may yield most unhappy results, and it depends entirely upon the judgment, firmness, and decision of the attending physician whether a catastrophe be averted or not. We should be ever ready to meet and cope with such an emergency.

MORAL PERVERSION.

It is not strange that a condition like the menopause, which causes disturbances in almost all parts of the body or aggravates those already existing, and which is especially capable of causing abnormal mental action, should cause a perversion of the moral sense, and by this I now refer to sexual matters alone, because other points under this head have already been discussed. A woman who has previously been a paragon of virtue may become a shameless sexual profligate during the menopause. There are instances of previously reputable women who have in a short time drifted into the business of keeping improper houses, and of "procuring" young girls. Many of them become extremely erotic, though previously possessed of only moderate inclination for coitus. Some become shockingly obscene and indecent, the tendency growing in rarer instances to gross extremes, and ending in dementia. Milder cases exist in which women of irreproachable character and conduct begin flirting, have clandestine meetings, write many affectionate letters, and eventually permit themselves to fall from grace. Many hide their new propensity from those who would be most shocked and incensed to learn of it, and themselves learn to regret and abhor their actions at the completion of the menopause. The same applies to some women during gestation, and to others during menstruation, or just before or after this period. I could cite some interesting cases, but prefer to confine myself now to general statements, leaving the consideration of details to another time.

As to treatment, I have only to suggest four different lines: 1. The general health of the patient must be kept at par. 2. Local intra- or extra-pelvic disturbances must be looked for and remedied as far as possible. 3. Utero-ovarian sedatives should be given with the two-fold object of relieving irritation and lessening sexual desire. 4. The patient should

have all opportunities for the stimulation and improper gratification of her propensity rigidly curtailed, at the same time that her mind and energies are actively employed in other, if possible agreeable, channels, but within physiologic limits, as the general health would otherwise become detrimentally affected.

Chapter VI.

ODDS AND ENDS.

The sacrificing of anything of value for the sake of perfect system is nearly as bad as the lack of system. Many times a good point is overlooked for the time, and thereby loses its proper place, but that is no reason why it should not have some place and be of use. The thoughts or facts that follow under the above caption seem to me of enough importance to merit the space they occupy, and in presenting them I make no pretence of rational sequence.

The diseases and marked symptoms with which women are afflicted at the menopause are an index to their prevailing weaknesses at this time, and the remedies to be used. Sometimes medication runs along corresponding lines (*similia*) and at others along contrary lines (*contrarius*), thus seeming to offset the regular practice against the homeopathic, but both kinds of treatment are rational in their respective indications. Thus a critical diaphoresis or hydro-catharsis are very properly helped along by the use of diaphoretics and hydragogues, while a menorrhagia is checked by means of ergot, ipecac, atropia, or *cimicifuga*.

Bleeding, though formerly much resorted to, is now seldom properly employed, and even then it is a fair question whether medication will not do more, as, for instance, the use of *veratrum viride*, *aconite*, or tobacco.

Sedatives are often required to allay the reflex irritation of the menopause, and for the allaying of spasms and sexual excitement none is better than camphor, if it can be borne by the patient. The bromides are also most excellent. Chloral hydrate is one of the best sleep-producers. Of the anodynes, one of the simplest and most efficient is a suppository of extract of opium, 1 grain, and extract of belladonna, $\frac{1}{4}$ grain. These may be passed up the bowel as often as needed. The opium also stimulates, and the belladonna relieves the tendency to spasms and remitting colics. Codeine is also one of the very best remedies purely for the relief of pain.

The warm bath is not as much used in inflammatory and acute congestive conditions as it should be. It may properly be regarded as a universal poultice. It is convenient of appli-

cation in most houses, in the city at least, is clean, and may be suitably medicated.

The local sexual organs are often very irritable and erratic during the menopause. These patients should be watched during the troublesome time, but need occasion no fear if this is carefully done, because with the cessation of the exciting cause there is a coincident subsidence of these abnormal inclinations. Sometimes the erethism is wonderfully increased, and at other times coitus is painful and may be repulsive. Do not shock the patient's sense of propriety if she is austere upon this point, and, in turn, be not shocked at anything she may say or do if she belongs to the opposite extreme. To show feeling in either case is to make an error.

As a rule, the menopause is more aggravated if the flow stops abruptly, and less troublesome if it leaves gradually.

The menopause does not necessarily destroy, or even obtund, sexual desire and enjoyment.

Electricity may be used during the menopause for its anodyne, astrigent, alleviative, and stimulating effects. The first three are obtained mainly by galvanism, the anode being the anodyne and astrigent pole, the kathode the alleviative or electrolytic pole, and the faradic being the most efficient stimulating current, though, in some cases at least, the static current is better.

Cotton vaginal tampons that have been steeped in 50 per cent. boro-glyceride cause a free transudation of the watery elements of the blood, and relieve local congestion and its consequent pain.

In many women during the menopause, there exists a fixed dread of something that differs in varying cases, being a fear of cancer in one case, of fatal bleeding in another, of the loss of vigor and sexual desire, and thus *ad infinitum*. These dreads are best allayed by the use of gelsemium or of cannabis indica, or both.

Ovarian extract seemed to me, in several cases, to have acted very satisfactorily in general irritation with pain in the ovarian region. Presumably it does by supplying to the organism some substance previously furnished by the formerly active, but now defunct, ovary.

Erotic hallucinations occasionally occur at the menopause, and cause much trouble unless ended, and in these the fluid extract of cimicifuga often acts like a charm; when it fails, ovarian extract sometimes succeeds, or both may be given together.

Irritability is controlled by rest, exercise, and medication. The weak should rest, the strong, work. Both require suitable

medicine—bromides to allay irritability, and a general tonic to build up the asthenic.

ENLARGED BELLY.

Many women at the menopause are distressed by enlargement of the belly, some because of the physical incapacity and distress that it induces, and others because of its objectionable appearance. It hurts the poor woman's efficiency at her labor, and her more favorably situated sister in her personal pride. Both are equally solicitous for relief, but whether they can be gratified or not depends much upon the cause of the swelling. If this is due to flatulence, aromatics, *nux vomica*, and a careful diet, are likely to give relief, some cases requiring the addition of an enteric ferment. It is important, too, to locate the site of gaseous distention; whether gastric, in which event it is to be found in the epigastrium and left hypochondrium, with dyspneic complications, and often precordial pain in imitation of *angina pectoris*; in the colon, when it may be found along the course of the large gut; or the small intestine, when it is to be noticed at and below the umbilicus. The frequent dip of the transverse colon down to and well below the umbilicus must not be overlooked.

At other times abdominal protuberance is due to depositions of fat either in the abdominal wall or within the folds of the peritoneum. I have seen an excessively fatty omentum with only a moderately fat abdominal wall, and I have seen the epiploic appendices so full of fat that they alone must have weighed several pounds. The mesentery, too, sometimes lodges great quantities of fat. The distinction between these conditions is sometimes easier than at others, and all may co-exist. The fat of the belly-wall can be grasped up in a fold of the skin. Upon the determination of the thickness of this layer, it is comparatively easy to estimate the amount of distention attributable to intra-abdominal accumulation, whether of gas or fat. If it is gas, percussion will reveal it, while if it is fat, it must be either in the omentum or other peritoneal folds. If fat be the cause of the distention, it can only be removed by means of the usual anti-fat cures, and, unless the accumulation is very distressing, the remedy may prove worse than the affliction.

IN CONCLUSION.

It is proper that a final word be said to the readers of this rather lengthy series on "The Change of Life in Women." First, because the subject was not treated in a perfectly systematic and connected manner, this being mainly due to the

undeveloped state in which this whole matter still exists. Second, the entire matter of the menopause is a neglected field of research, and the reason for this being so is not evident, for the demand on the part of unfortunate women afflicted at the menopause is very great. Perhaps, however, it is the customary habit of viewing all complaints at this time of life as being natural that makes women neglect to seek the relief they so much crave and need. Third, the change of life is not a disease. It is a cessation of an extremely important function, adjustment of the system to the change causing so much sympathetic nervous disturbance that the patient is thereby the more prone to suffer certain complaints, and to have any with which she may be incidentally afflicted much aggravated because of the hypersensitive state of her organism.

I have concerned myself very little with the speculation as to whether the uncomfortable manifestations of the menopause were due to deficient elimination of a poisonous product, formerly thrown off regularly with each recurring menstruation or used up in some mysterious way in the growth of the ovum, or whether due to the failure to regularly secrete some important ovarian material essential to the health and comfort of the individual. I simply did not, do not, know, and I am not aware that anyone else does. Idle speculation upon these points is interesting to speculative minds, but it subserves no useful purpose in the relief of our patients. What it may do in the future is for the future. My sole aim has been to be practical, and to supply that which we do not get entirely in any of the existing text-books, though we do find considerable of value in some standard works, and scattered here and there in current literature. 'Tilts' book upon the change of life still has a reputation among many, but it is very antiquated, both in pathology and treatment. In its time it put together the accepted theories and treatment of the day, and served as a departure from which to build better. Such a work upon modern lines is needed. The field is a rich one, needs much going over, but will bear well.

Finally, I desire to reiterate my former statement, and it is one of the most important I have made in this entire series, to the effect that no special disease is peculiar to the change of life in women, but that the nervous excitability of this period aggravates all existing trouble, and, because of the susceptibility to impressions, is more apt to be visited by discomforts and derangements than is otherwise usual at the same time of life, as is shown in men, as well as in women who change sooner or later. The key to treatment is to recollect the hypersensitive state of the reflexes.

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